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OCTOBER

MODEL AIRPLANE NEWS

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The GOLDEN SWAMP

by Raoul Whitfield

Bernarr Macfadden's School for Boys

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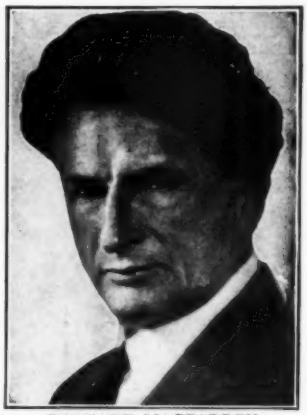

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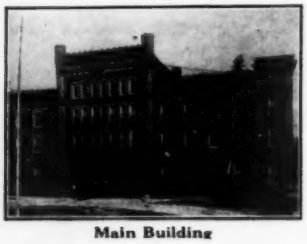
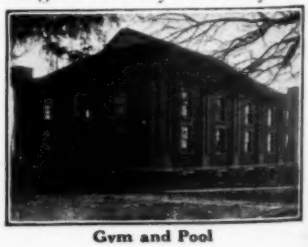


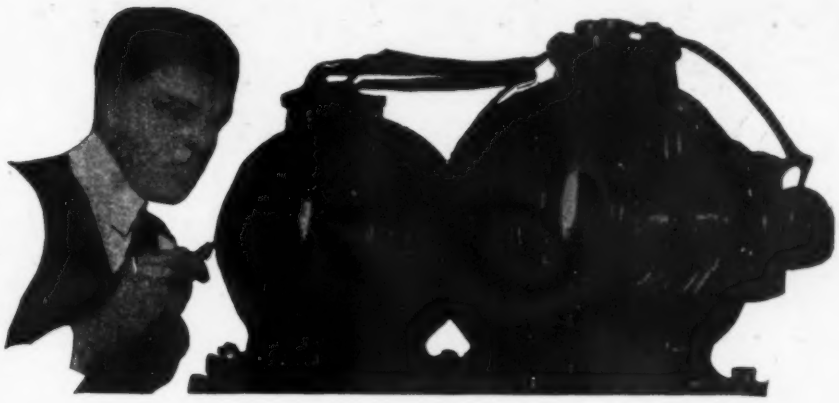
Main Building

CASTLE HEIGHTS
Military Academy

LEBANON **TENNESSEE**



Gym and Pool



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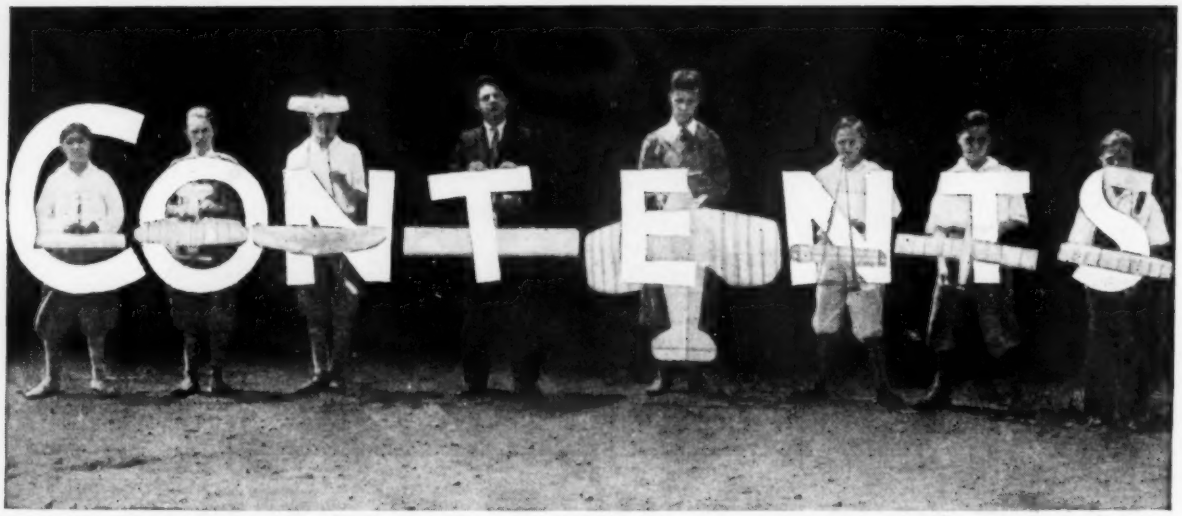

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KEEP COOL!

THROUGHOUT your life you will be called on to make decisions; some will have to be quick decisions; others you will have time to think about. However, in aviation quick thinking and the making of equally quick decisions are essential to good flying.

It is all a matter of mental balance and the quality of thinking clearly, of taking in the situation at a glance and of knowing what to do in any given circumstance. This means dividing your mind into compartments so that while looking out of two eyes you "see" with a "hundred" eyes. Train your mind to this. Concentrate on developing broader vision. Many who walk along a cobbled road merely see the cobbles. They forget that by looking up from the road and straight ahead a broad vista will be opened to them, encompassing the beautiful landscape which borders either side of the road.

Train yourself to be calm and to keep your thoughts collected. Do not, however, confuse this with being "casual" or "fatalistic." The fatalist waits for something to happen, while the man who has gained self-control makes things happen as he sees fit. Do not confuse quickness with being hasty. *Keep cool!* Do not lose your head when the situation calls for quick action. Exercise physically and mentally to bring about automatic coordination between your brain and muscles.

When you have done this, you are well on the road to that stage so aptly described by Tennyson in the words:

"Self-reverence, self-knowledge and self-control,—
These three alone lead life to sovereign power."

KEEP COOL!

THE EDITOR.

"Look, Fred, Look!" Squint's voice was pitched high, excited. "In the dugout—up toward the front of it—Dave's sweater!"

The Golden Swamp

By RAOUL WHITFIELD

BRENT FABER and Fred Lane stood beside the wings of the DeHaviland plane and watched the tall, powerfully shouldered man approach them. The tall man was Fred's father and upon his decision hung the fate of the flight over the Everglade country.

To "Squint" Faber and Fred it meant a lot. They wanted desperately to fly southward. The ship was in readiness. Now it was up to Fred's father.

Harrison Lane reached the side of the plane. His gray eyes ran along the length of it, then met his son's blue ones. He raised his right hand slightly; in the fingers of it he held a slip of yellow paper, a telegram. He spoke quietly.

"I've a wire from the Coast Guard, boys. No sign of the *Betty G*—not a trace. But they haven't been inside the Glades yet. The storm left them a lot of work. They can't go inside. The wire suggests that if we have a plane and a licensed pilot it would be a good idea to wing over the channels inside."

Fred grinned broadly. But his father did not smile. He turned toward Squint Faber and spoke slowly.

"How do you feel about it, Squint?" he asked. "Think you could spot the *Betty G* from the sky?"

Two Young Flyers Hover Over the Danger-fraught Everglades In Search of Their Lost Friends, When—

Squint nodded. Tall and dark, with his eyes slightly squinted from the strong sun of Florida, Brent Faber was six months older than Fred Lane and of a quieter, more serious nature. He had obtained his pilot's license almost eight months ago and was a conservative, steady flyer.

"I'd like to go, Mr. Lane," he said quietly. "The boys may be in bad shape inside the Glades. They haven't a lot of supplies; they were nearing the end of the longest run when the storm hit the west coast. I think we can find them."

Harrison Lane smiled grimly. He stared down at the telegram, then frowned. The boys had always respected Fred Lane's father. A big game hunter, familiar with the Everglades, he had given the three pals of Squint and Fred much advice before they had started out on their boat trip.

"We ought to fly down there, Dad!" Fred stated eagerly. "Dave and Lew pulled *us* out of the water when the outboard turned over last May——"

Harrison Lane interrupted him grimly. His eyes were on his son's. In them was a look of understanding.

"You should go, Son," he said quietly, "if you can do any good. And you can do good—if the boat can be located. A land ship, flying over the Glades, that's not so good as a seaplane, you know."

Squint spoke in a level tone. "I think we should try, Mr. Lane," he said slowly. "We're ready to take off. The D.H. is right for the air. The *Betty G* may be wrecked somewhere—"

He broke off. Harrison Lane was smiling at him. Then, slowly, he nodded his head.

"All right! Wing down there and see what you can do. You're both pilots; you've heard a lot about the Everglades. If I didn't think the *Betty G* might be in bad shape, I wouldn't let you go. As it is—go to it!"

Fred Lane let out a yell. Squint was grinning broadly.

"The ship's ready, but I'll have to go over to the house and tell the folks. They've said all along that it would rest with you, Mr. Lane."

Harrison Lane nodded. The smile was gone from his handsome face.

"I can't speak for you, Squint," he stated. "But you're older than Fred. You can steady him when he's running wild. If *you* go, Fred can go."

Squint turned toward Fred and stuck out a hand. His pal grasped it. They both grinned.

"We take off in an hour, Fred," Squint said in a steady voice. "And we shall wing for the Glades!"

"By this time tomorrow," Fred stated enthusiastically, we may have located the boat!"

Harrison Lane smiled grimly. He spoke very quietly.

"If you have, Son," he stated, "it'll be the first time

a battle has been won so easily with the Everglades swamp!"

A hot sun beat down on the doped, glistening wings of the DeHaviland. Beneath the plane, to the westward, was the Gulf of Mexico—a green-blue sheet of color with only the faintest of motions to be observed on it from the 5000 feet of altitude at which the two-seater ship was flying. A half-mile or less to the eastward was the Florida shore line—white beach, palmetto trees and scrub pine.

The plane was winging southward at a speed of almost ninety miles an hour. And in her cockpits she carried Squint and Fred, up in search of the *Betty G.* Their helmeted heads rose above the stream-lining of the plane's fuselage; phone-sets were strapped over the leather that protected the wearers from the backwash of the ten-foot propeller.

FRED spoke through the mouthpiece of the phone-set, which hung just below the level of his lips.

"The *Betty G* was caught somewhere between Cape Sable and a spot not so far from here, Squint. We helped plot the course. And that storm was a hummer. If we'd gone along, as we'd planned—"

"You wouldn't have gotten your pilot's license, Fred," Squint cut in. "Dave Brown's a pretty good navigator and Lew and Bert Kane can take care of themselves. The Coast Guard hasn't found the wreck of the twenty-eight footer. If it wasn't that the supplies must have been low, I wouldn't worry so much."

Fred nodded.

"She was hugging the coast line," he muttered through the wire connecting the phone-set. "Ten to one Dave took her inside when the storm broke. He's always wanted to go into the Glades, anyway. But five days have passed since the storm."

Fred broke off and stared down over the side of the fuselage. Squint was flying the D. H. from the front cockpit. He spoke grimly and his face was anxious.

"Something's happened, of course. Dave would have made port two days after the storm had passed, if there hadn't. That was a mighty bad storm and he'd know we were anxious."

The ship winged onward. Jacksonville was far behind them now. They had passed over St. Augustine, Daytona Beach and the center of the state. Then they had winged southward again. Sarasota, the Gulf Islands, and now they were roaring toward the Mangrove swamp—the Everglades. The sun was getting down in the sky, but it would be light for a few hours yet. The mouth of Big Shark River was not many air miles distant.

"Hang on, Fred, we're going to hit it!" Almost instantly the shock came

It was Fred who broke a silence of several minutes. He had been looking at the roller map; now he stared down along the line of the coast.

"Not a boat in sight, Squint. How long before we

reach the mouth of Big Shark?" he asked anxiously.

"About thirty minutes," Squint replied instantly. "That is, if we have luck."

Fred straightened in the cushioned seat of the rear cockpit. There was a peculiar tone to his pal's voice. The "if we have luck" had taken Fred by surprise. Everything seemed all right—the D. H. was roaring steadily; there was not even a faint off-beat in the voice

of her Liberty engine. Fred glanced at the set of instruments on the dial-board before him. The instruments showed nothing wrong in the engine's functioning. The altitude was good; the air-speed steady. Oil was at the right pressure. The engine was cool.

"Why 'if we have luck,' Squint?" he demanded quietly. "Is there a squall in—"

He checked himself instantly. As he had spoken, he had stared toward the southwest. And his eyes had seen it—a slow-moving blanket of white, rolling in with the drift-wind from the west.

Fog! That meant still further danger to encounter.

"That fog'll hit us within fifteen minutes, Fred," Squint's voice was calm. "They have a lot of it down here. It may be thin stuff and, perhaps, we can fly through it; out of it. But if it's a *real* dose—"

He stopped. Fred was keeping his blue eyes on the white sea of it, a frown on his face. Then he turned his head, pulled the day-glasses from a rack at his side and inspected the beach ahead and to the east.

"Soft sand in places and where the sand isn't soft there are palmettos and scrub pine almost to the waters' edge. What if it *is* thick stuff, Squint, and we can't fly through it?"

Squint spoke slowly. "Use your glasses all along the beach, Fred," he instructed. "And then use them back of the beach. That's swamp in there—Everglade stuff. Not close to the coast, but back a few miles. I'll boost her up to ten thousand and you take a good look, so that we don't pass anything. If Dave and the boys got inside and were lost, well—they might just stick in one place for a long time. I don't think they're this far north and I don't see how they could get past the coast line along this stretch. But she's deceptive—and we'll play safe. Take your time, Fred. I'll watch the fog coming in on us. If it's too thick we'll make a landing on the beach. It may lift in an hour or so, but by that time it'll be dark. It's likely to stick until morning."

Fred nodded and raised his day-glasses. He focused them on the shore to the eastward. Squint had pulled back on the joy-stick. The DeHaviland was climbing. Her engine roar had changed in tone; it held a higher-pitched beat now, under the strain of the climb toward the sky. The fog was rolling in steadily. It looked thick and dangerous to Squint.

But he said nothing more to Fred. In the rear cockpit, Squint's pal and mechanic in the air search for the missing twenty-eight footer held the glasses to his blue eyes. He saw nothing that resembled a boat back of the coast line. A white strip of sand—the beach—made a straight line of color in the sweep of the glasses. Fred groaned.

He was thinking of Dave Brown, Lew Collins and Bert Kane. Fred had plenty of confidence in Squint. For two years they had been comrades. Squint was a fighter, when there was *reason* for fight. He played without quitting. And there had been Dave Brown, too. Red-headed, swift of temper, with a still swifter sense of shame, Dave had been loved by both Squint and Fred. They were both certain that Dave had gotten the *Betty G* through the storm. He had handled boats since his short-pants days. But they were not so certain that Dave had been able to move the boat after the storm.

Now, searching the level, green-and-white land to the east, Fred shook his head slowly. There was no sign of life or habitation. Mangrove and sand, with a few palmettos—the latter being less and less in evidence as the two-seater roared southward through the sky.

"It's the toughest swamp in the United States, I guess." Fred spoke aloud. "But they'll have it tamed in ten or fifteen years."

Squint, his eyes on the fog, shook his head slowly.

"The Glades will be hard to tame," he stated. "You know what they're up against in making the Tamiami trail—fourteen feet of water and black mud in some places before they found rock; heat; mosquitoes; snakes and panthers."

"Easy there!" Fred lowered his glasses. "Trying to scare me to death? How about guns, Squint? Did the

crew of the *Betty G* have them?" Squint nodded his helmeted head.

"They had 'em," he stated quietly. "But Dave's the only one of them who can shoot in an emergency. And if he got up against a panther he'd probably forget all his father taught him."

"Which goes for me too!" Fred put in. "What's the chance of running into a panther?"

"Not much," Squint answered. "But there *are* panthers in the Glades. Say, Fred, keep on the job. That fog's getting in close. Less than a mile now. I'll have to drop down a bit and get nearer the beach."

Fred raised his glasses again. But he made one more statement.

"We'll probably crash on the beach and be stranded for a week or so. Then we'll find out, when some one reaches us, that Dave and the boys put into Key West or some other place and never even knew there was a storm."

"That sort of news would suit me fine, Fred," Squint replied grimly. "I hope they did put in somewhere. But that storm came up quickly and Dave may not have been watching the barometer closely. I'm hoping your guess is correct, but I don't think it is."

As Squint nosed the DeHaviland downward, cutting the throttle a few notches to slow the speed of the dive, Fred Lane was forced to agree with him. The chances were that the crew of the *Betty G* had received little warning. It was probable, too, that the twenty-eight-footer had been caught west of the Everglades, along the coast.

They were down to 2,000 feet before Fred spoke. He had placed the day-glasses back in the rack and was fumbling with his safety belt buckle. In the air he rode with the belt unfastened, but when it came to landings Fred always made sure that it was snapped tight. If the ship went up on her nose or over on a wing, he wanted to be held securely. Falling out might mean a broken arm or leg, and this was bad country for such an injury.

"NOTHING in sight, Squint. That fog looks thick. Are we landing?"

"We are!" Squint's voice was grim. "See that curve in the beach ahead? We'll hit on the far side, where the sand comes out again. The fog is low and thick. We've got to beat it to the sand. It's the first tough break, Fred, but it may not hold us up long. Sit tight!"

The DeHaviland came down in a steeper dive than the one in which Squint had held her. The wind was shrilling through flying wires and struts. A flock of pelican soared inland from the beach, disturbed by the scream of the air through the plane's rigging.

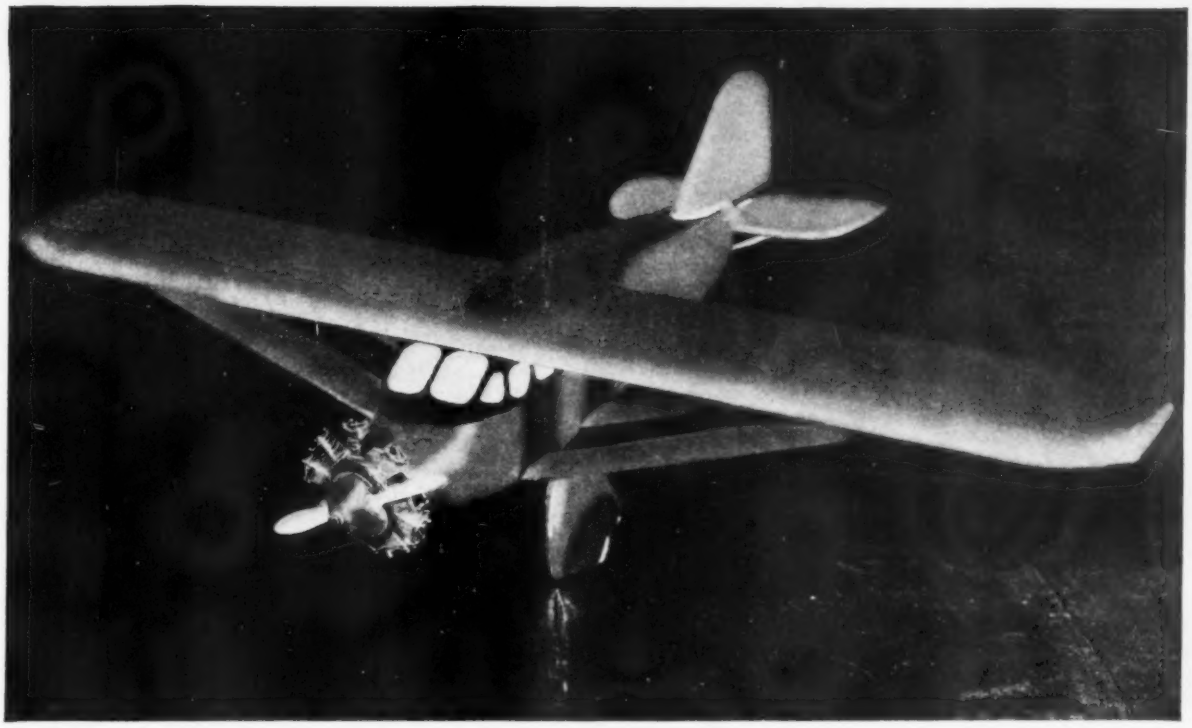
"I've a wire from the Coast Guard, boys. No sign of the *Betty G*—not a trace"

Fifty feet above the beach Squint moved the joy-stick back slowly. The plane came out of the dive, her speed diminishing. The fog was a white wall advancing upon the shore. It was low, rolling over the green of the water. Squint gave it one last glance, then turned his attention to the landing of the plane.

The beach had curved inward sharply—a depression in the shore line made by some whim of the Gulf waters. The DeHaviland, less than twenty-five feet above the water now, was dropping slowly as it lost flying speed. Then the sand curved outward again. The plane was less than ten feet above the brown-gray color.

Fred was peering ahead and to one side—the Gulf side. The fog was almost upon them now; he knew they would be down only a few seconds before it. He knew, too, that Squint was staying near the water's

(*Cont'd on page 40*)



How to Build a Scale Model of a Bellanca CH Monoplane

Here Is a Scale Model of a Plane Noted for History-making Flights and Achievements

THE Bellanca Model CH, one of the most popular commercial cabin monoplanes, which is described in this issue, has many historical features, including transatlantic flights, in its long list of performance achievements. It is well worth the time and materials for any model builder to construct such an exact scale model both for exhibitional and competitive purposes at any future scale-model contests.

How to Build

STUDY the layout plans very carefully and be sure to keep in mind that these plans are for a scale model only and all parts excepting metal fittings are of solid wood construction. Now, let's check up on all the parts needed so that we can lay them aside on our work-bench to be within reach when needed.

Fuselage

WE first select our wooden balsa block, size 3" x 3" x 12", and start work on the fuselage of our Bellanca CH model. Take your whittling knife and cut this block down to the full-size scale as shown in drawings 1 and 2. Be sure to leave about 1/16" oversize all over when cutting. This oversize is worked away with fine sandpaper so that when the original size is reached a smoothly finished surface has been obtained.

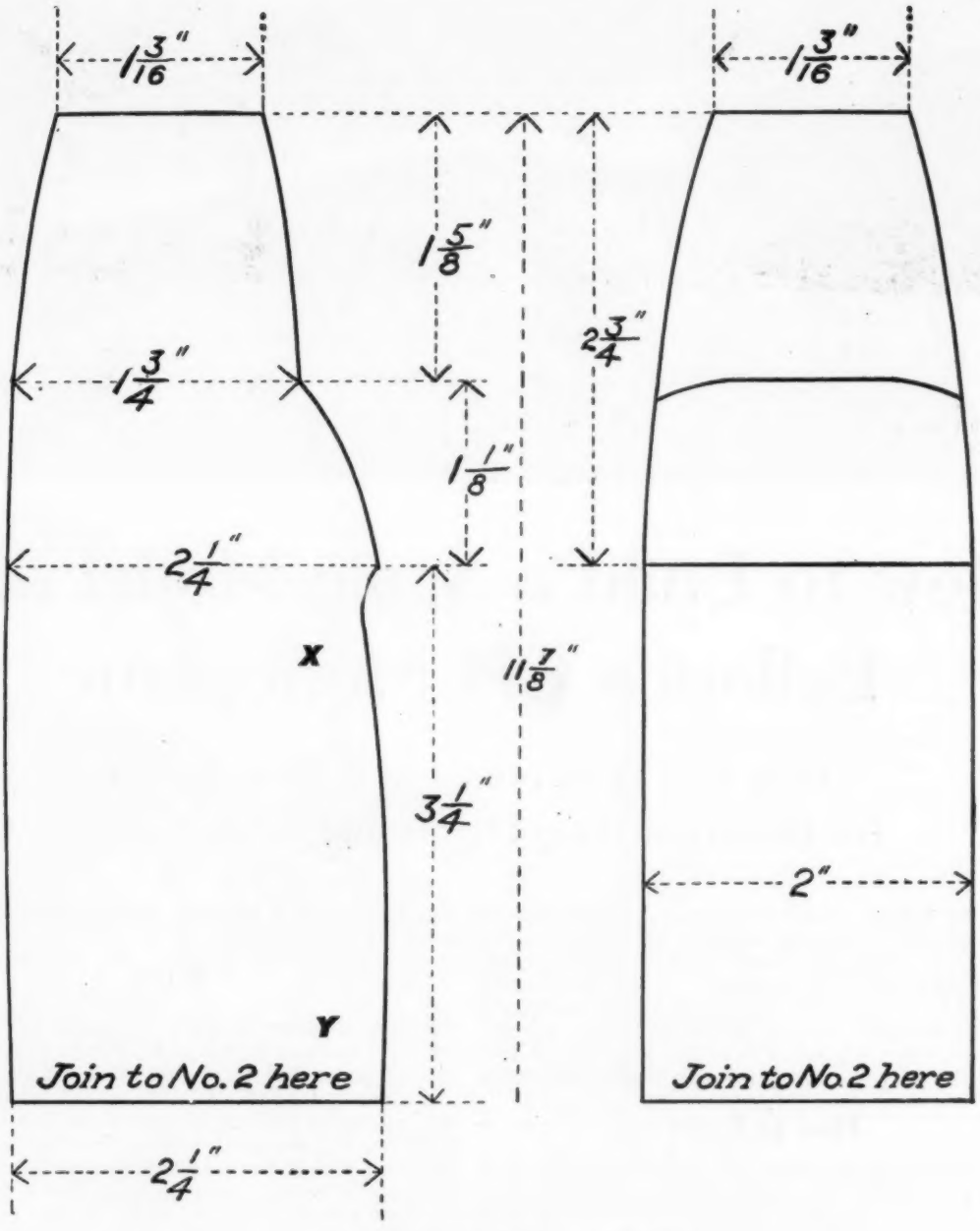
Wing

TAKE the piece of balsa size 3½" x ½" x 23½" and start work on the wing. First take a sheet of transparent paper and trace upon it a general outline of drawings 3, 4 and 5. Use this paper, which is called a template, or pattern, to make an outline on the piece of balsa. Cut away all waste material with your knife or small coping saw. The center section of the wing, as you will notice in drawing 4, becomes a part of your fuselage and care must be taken, while you sandpaper the wing surface, that you leave enough material in the center so that when you are all finished with your wing surface there will still remain a half-ellipsed piece extending ¼" above the wing surface at the trailing edge. This half-ellipsed shape is 2" wide at the rear and extends forward 2 7/16".

Tail Surface

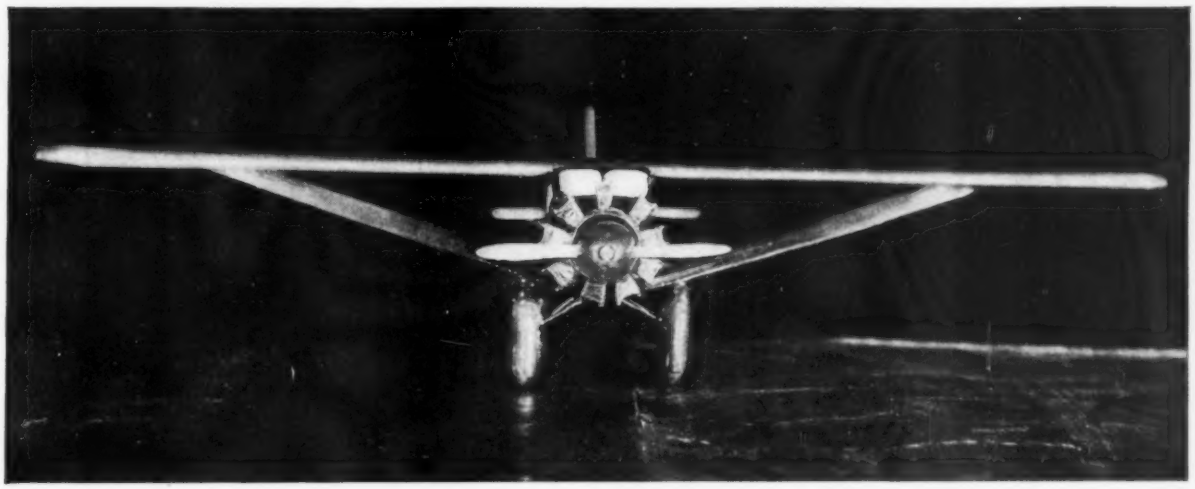
FOR the tail surface we select from our materials the piece of balsa size 2¼" x ¼" x 6" and with a transparent piece of paper we make an outline of drawing 6. This piece of paper after we trim along our

No. 1



FUSELAGE

Shaded portion shows part of fuselage in this drawing.



penciled outline is called a template and by laying this template flat on our piece of balsa we make an outline of it upon our balsa strip. Use fine sandpaper to smooth down to a cambered finish.

Rudder

FOR the rudder we use the piece of balsa size 3¼″ x ¼″ x 4″ and again we make a template or pattern of transparent paper, this time of drawing 7. Also make outline of template on our piece of balsa to be used for the rudder. Cut away all useless material and sandpaper down much in the same manner as you did in the case of our wing surface.

Necessary Material

1 piece	balsa wood	3″ x 3″ x 12″
1 piece	balsa wood	3 1/2″ x 1/2″ x 23 1/2″
1 piece	balsa wood	2 1/4″ x 1/4″ x 6″
1 piece	balsa wood	3 1/4″ x 1/4″ x 4″
4 pieces	balsa wood	1 1/4″ x 1/4″ x 7 1/2″
2 pieces	balsa wood	3/4″ x 2″ x 2 1/2″
1 piece	balsa wood	1″ x 1″ x 1″
1 piece	balsa wood	1/8″ x 3/16″ x 36″
2 pieces	balsa wood	3/8″ x 3/8″ x 3/4″
1 strip	split bamboo	
45	iron or copper washers, size 5/16″ outside diameter	
9	household wooden match sticks (with heads removed)	
18	bank pins	
3	1/4″ copper washers	
1	1 1/2″ round-head nail—1/4″ head	
1 can	ambroid	

Orange, black, white, and yellow paints for finishing.

Struts

SELECT from the materials on hand four pieces of balsa size 7½″ x 1¼″ x ¼″ and proceed to cut into shape with your knife to match drawing 8. Four struts are required and care should be taken to sandpaper these parts very carefully to give a perfect streamline appearance. The small auxiliary struts M and N in drawings 6 and 11 are made from the ⅛″ x 3/16″ balsa on hand. Care should be taken to cut these small struts exactly to size as shown in drawing 6.

Tail Skid

THE tail skid is made from a piece of bamboo size ⅛″ x 3/16″ x 1¼″ which will allow for ½″ of it to enter hole made in fuselage; shown in drawing 11.

Wheels

THE wheels are made from two pieces of 1″ x 1″ x ¼″ balsa by measuring in ½″ for the exact center, then using your compass to make exact circle 1″ in diameter. If you have no compass handy, use a small pin with string and pencil attached and draw a circle. A compass is better.

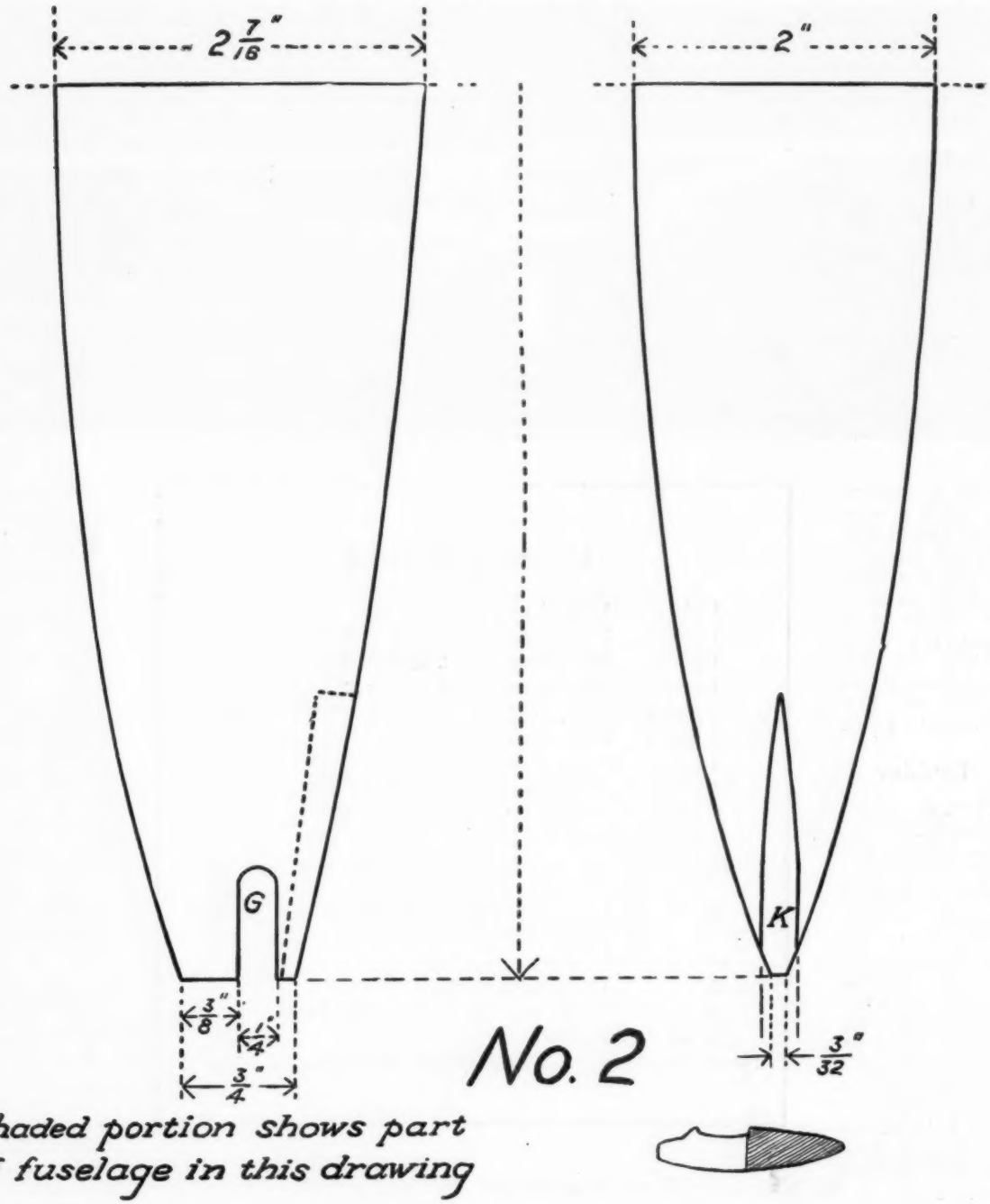
Bank pins make excellent axles for this model. See drawing 9.

Engine

THE engine design represents the Wright Whirlwind J-6 nine-cylinder, radial engine. Use the match sticks ½″ long and space five of the 5/16″ washers 1/32″ apart on match stick; hold in place with ambroid. Make nine such cylinders and have ready for assembly later when they are thoroughly dry. See drawing 10; also see enlarged diagram for instructions.

Propeller and Spinner

THE propeller is modeled after the shape of a standard steel propeller in use all over the world and is made up in two sections as shown in drawing 10. In making the propeller use your piece of balsa size ⅝″ x 1/16″ x 5″ and carve two pieces as per template and steam to shape. This will give you two blades with the correct pitch to be inserted and glued with ambroid into the spinner. The spinner is made from the last piece of balsa you have on the work-bench which is 1″ x 1″ x 1″ and must be sandpapered into a cone to streamline from



the point to the engine mount of the fuselage as shown in drawing 10.

Assembly

NOW we take our fuselage which is all nicely sandpapered and ready for the assembly. Lay a good coat of ambroid on top of the fuselage between points marked X and Y as shown in drawing 1. The wing is then set into place with the leading edge of wing inserted at point X, which will make a tight fitting at the trailing edge which is marked Y in the same drawing.

Be careful to see that wing is exactly in center and that the upper fuselage extension, which was carefully carved out on the wing and extends above the top of wing surface, is sandpapered to correspond with the lines of the top of fuselage. When finished, it will give the appearance of the wing and fuselage being made of one piece. Next we take the tail surface, or stabilizer, and enter point H of the tail surface as shown in drawing 6, into slot G of the fuselage as shown in drawing 2. When this is done and tail surface is exactly in center, make fast with ambroid and let dry. Next put on the rudder which is nicely finished and waiting to be put into place. Take the rudder and enter edge of rudder J (see drawing 7) into the slot K in fuselage as shown in drawing 2, making sure to ambroid tight and set aside for a few minutes to dry.

We next take the plane which is rapidly being completed and lay bottom up on the work-bench in order to affix the landing-gear in place. Take landing-gear

U as shown in drawing 9 and ambroid into place exactly 2½″ back from the front edge of the fuselage. Measure the same distance on the opposite side of the fuselage and affix landing-gear R in the same fashion. Strengthen with small auxiliary landing-gear struts D and E as shown in drawing 9, by ambroiding these struts fast to landing-gear and fuselage.

We now take the large wing strut number 1 (see drawing 8) and ambroid it fast to the landing-gear at point R as shown in drawing 9; small end of this same strut is attached to the wing ½″ in from the leading edge and 6¾″ out from the fuselage as shown in drawing 11. Now measure 1″ from the rear edge of the landing-gear at fuselage and ambroid strut number two (see drawing 9) to the edge of fuselage at S; the small end ambroid to the wing ⅝″ from the trailing edge and 6⅝″ out from the side of the fuselage. Now strengthen the wing struts at the small end which are attached to the wing with the small struts N as shown in drawings 6 and 11. Struts numbers 3 and 4 are affixed in the same manner, using the same measurements and drawings.

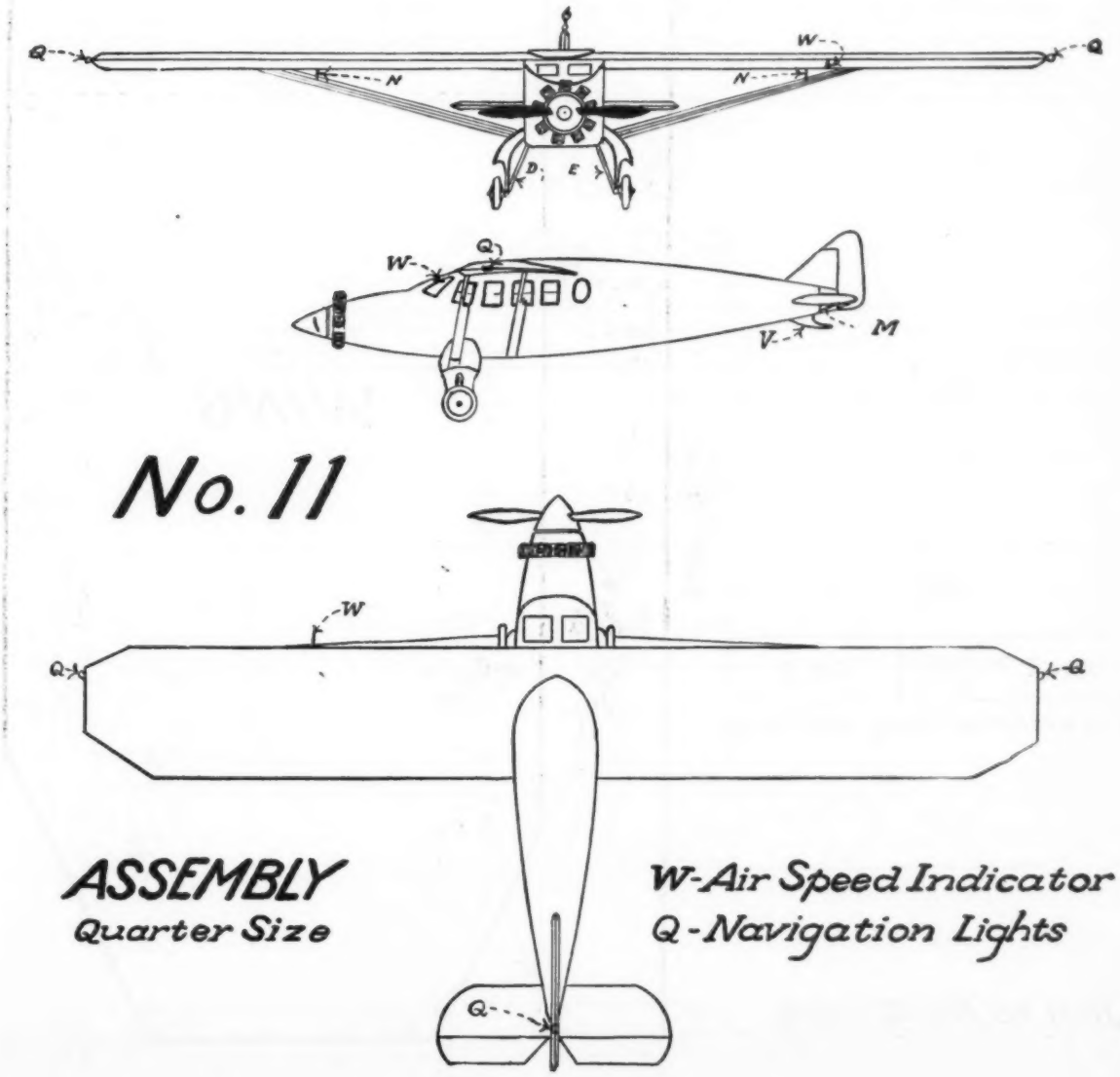
We still have two small struts M left that are to be ambroided into place as shown in drawings 6 and 11 from the bottom edge of the fuselage to the stabilizer or tail surface, which acts to strengthen the tail assembly of our ship.

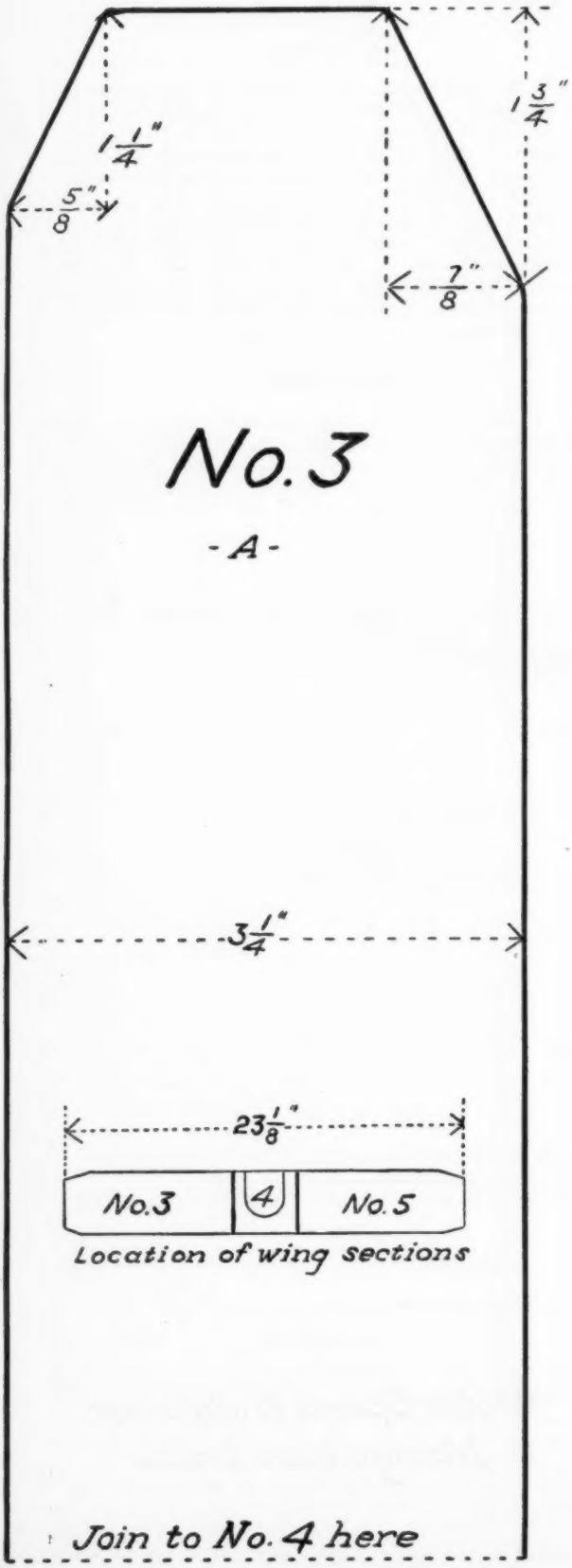
Cylinders

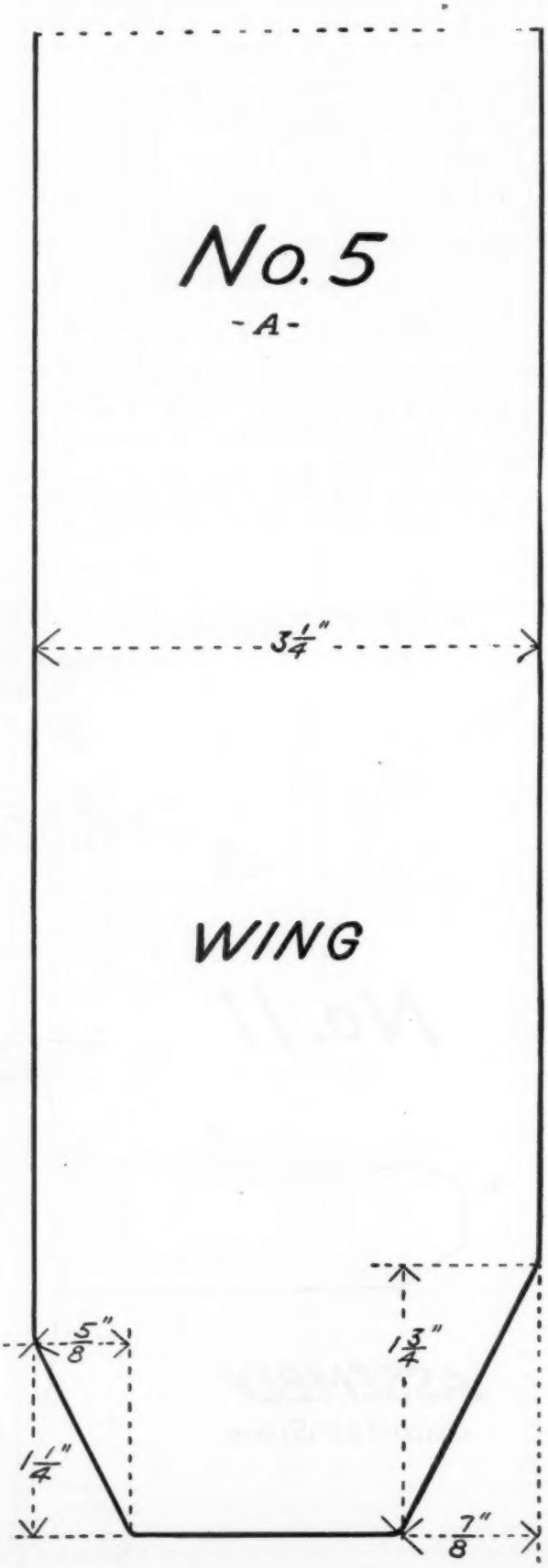
NOW we will mount the cylinders of our engine by measuring 5/16″ from the front edge of our fuselage and marking a pencil line around the entire circumference; then divide this circumference into nine equal parts so that the cylinders will be all equally separated. Use a ⅛″ drill in making the holes for your cylinder stems. Put a drop of ambroid on each stem before inserting into drilled hole so that cylinders will be permanently affixed. Take your bank pins and with a pair of wire cutters cut off one side of the T and use two pins for each cylinder; which will resemble the rocker arm housing of the engine.

Propeller

NOW take your propeller and spinner and at dead center of the spinner drive through a 1½″ round-headed nail; slip on your three ¼″ copper washers as shown in drawing 10 so that the propeller will not bind. Then drive propeller nail into the center of the




1 1/4"
5/8"
1 3/4"
7/8"
No. 3
- A -
3 1/4"
23 1/8"
No. 3
4
No. 5
Location of wing sections
Join to No. 4 here


No. 5
- A -
3 1/4"
WING
5/8"
1 3/4"
1 1/4"
7/8"

fuselage just leaving enough clearance so that you may spin the propeller.

Your Bellanca CH scale model is now complete and all ready to be dressed up in smart colors similar to its big sister ships which crossed the Atlantic Ocean not so long ago.

Painting

THE standard colors for this type of ship are orange for fuselage, rudder, wing struts and landing-gear; yellow for wing and tail surface or stabilizer; black for wheels and engine cylinders; red for window casings.

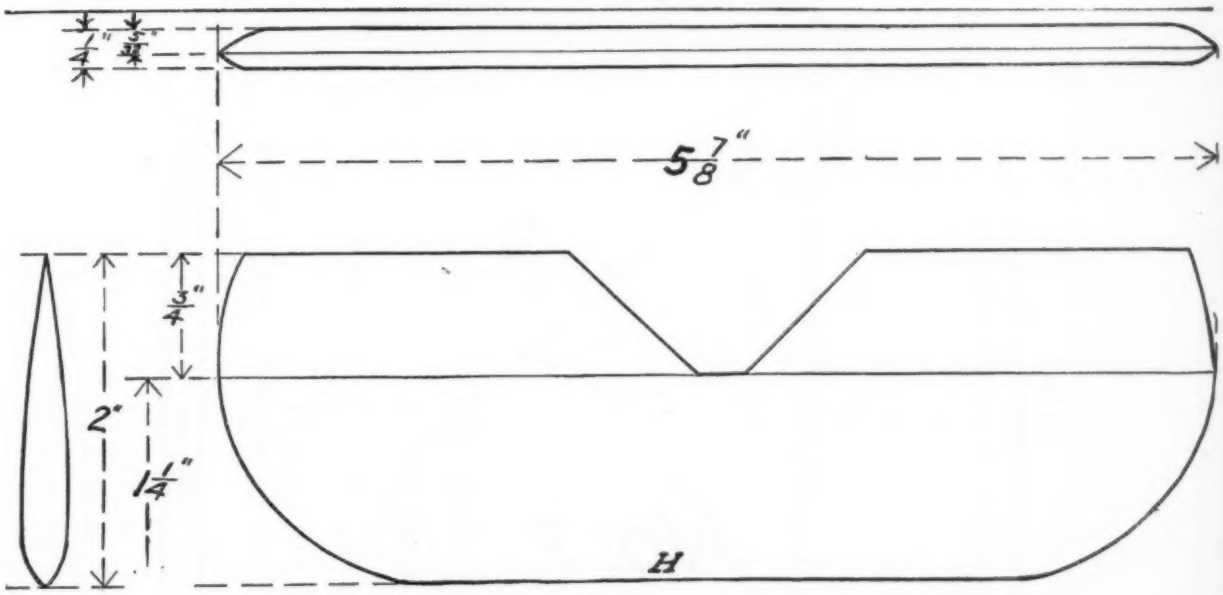
Be careful in applying the paint to see that you obtain a smooth finish. This is done by drawing your brush in one straight movement in the direction of the grain of the wood. A smooth and glossy finish to the paint work adds greatly to the appearance of the model and creates a better impression in the eyes of the judges.

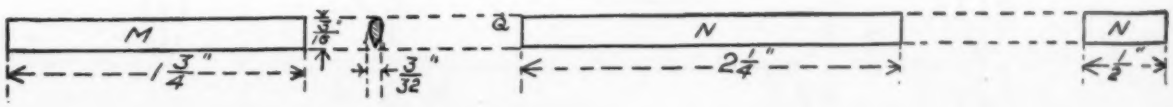
Use a different brush for each color as there is every possibility, if you use only one brush, that in cleaning the brush the color previously used might not be washed out completely and therefore spoil the next color.

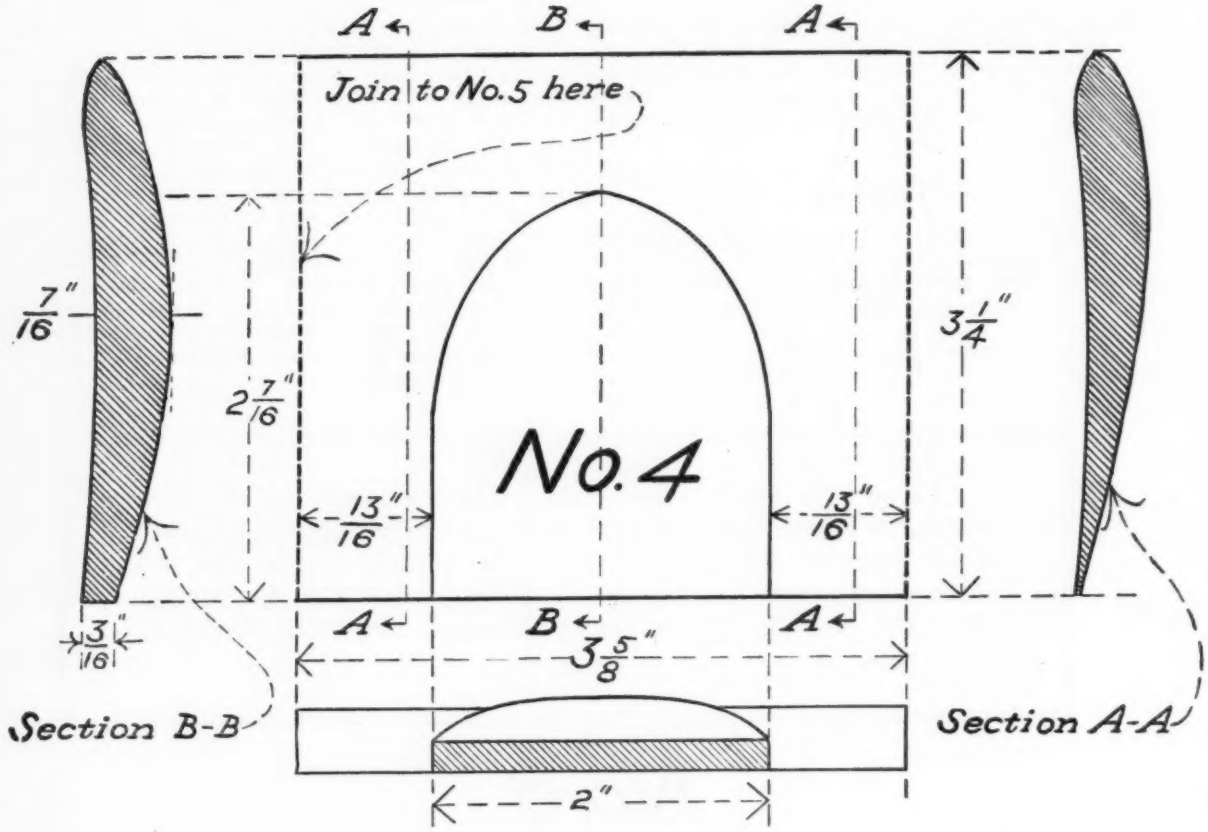
It has been found that by taking one section at a time the paint work can be more easily accomplished, with less danger of spoiling it. Take the wing, for example, and paint that. Then put the model aside until the wing is completely dry, so that when you start to paint the fuselage if your hand should come in contact with the wing there will be no possibility of smudging the paint.

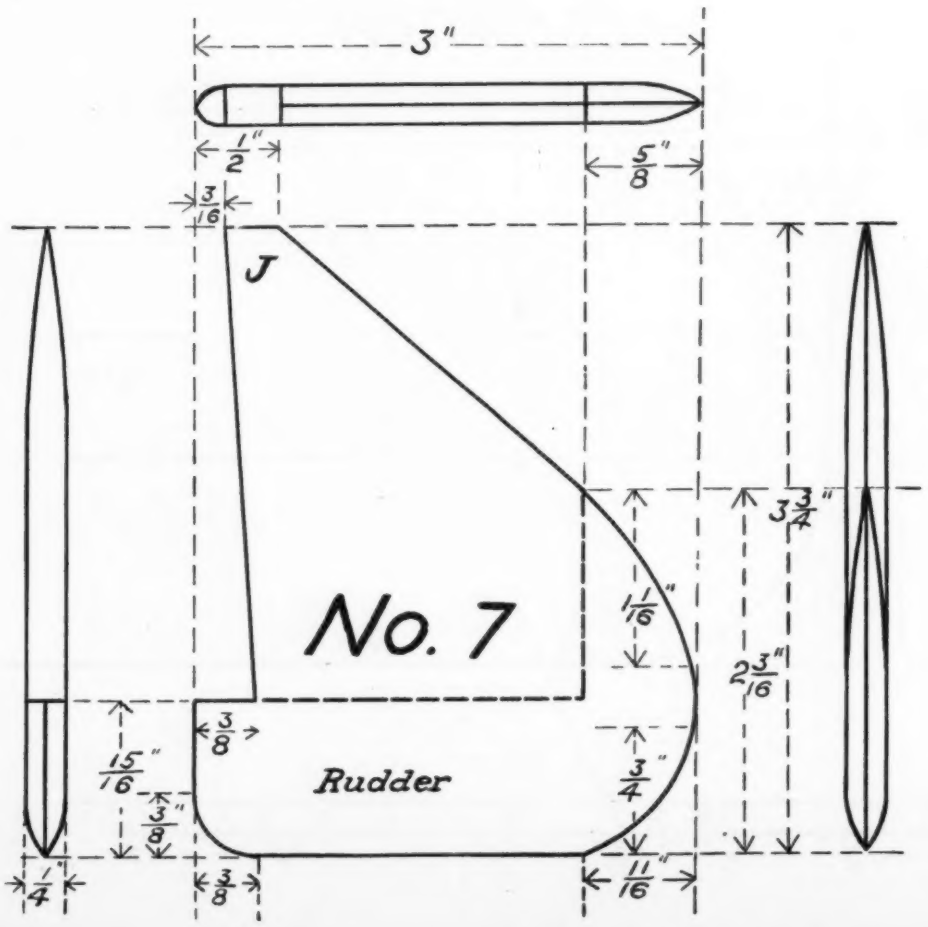
Those who wish to purchase parts for the construction of models, or blue-prints, will be furnished with the name and address of the company which stocks these parts, upon request for this information from the reader. Address the Editor, MODEL AIRPLANE NEWS, *Macfadden Publications, Inc., 1926 Broadway, New York City.*

No. 6
ELEVATOR

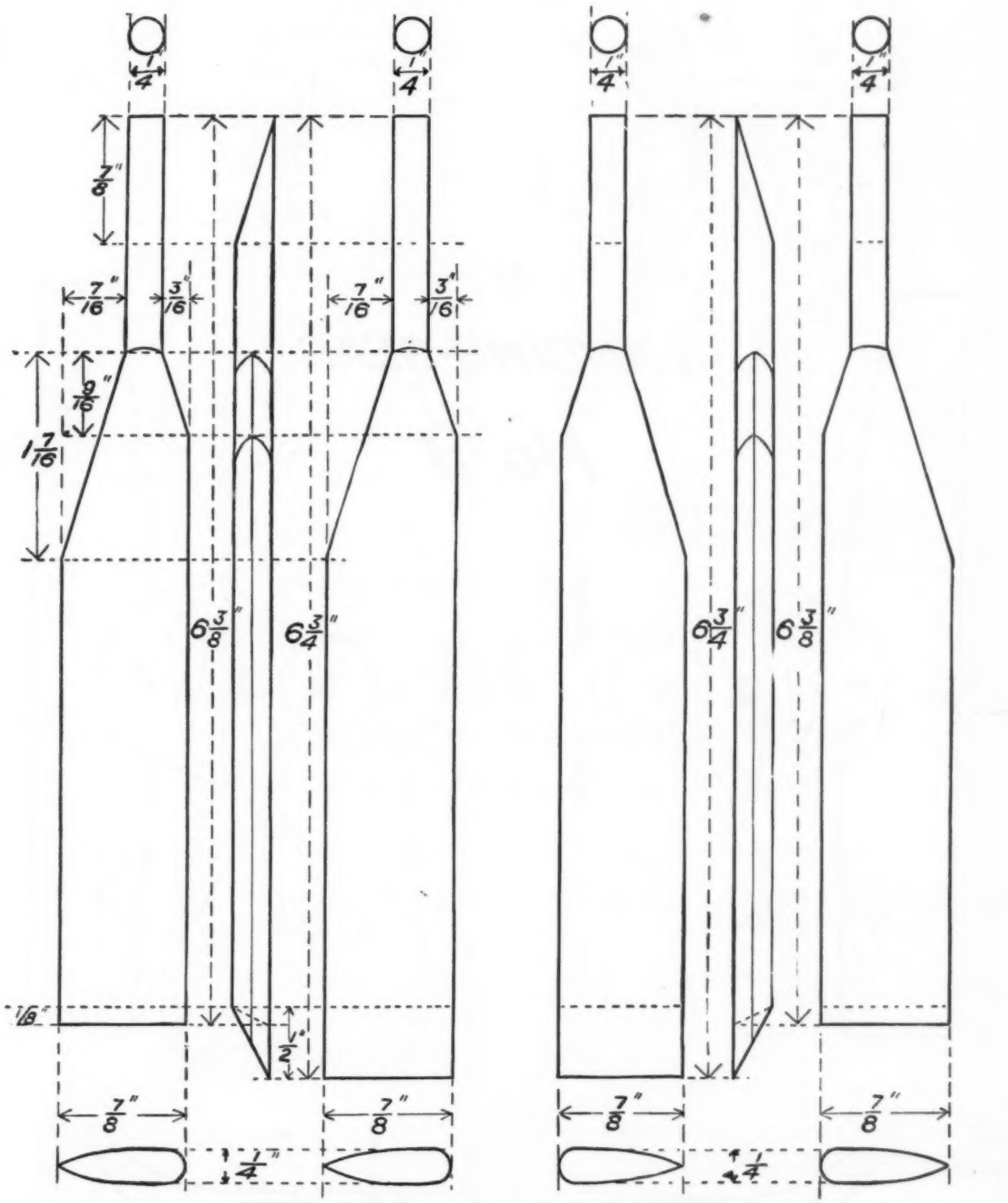





A
B
A
Join to No.5 here
7/16"
2 7/16"
No.4
13/16"
13/16"
3 1/4"
A
B
A
3/16"
3 5/8"
Section B-B
Section A-A
2"

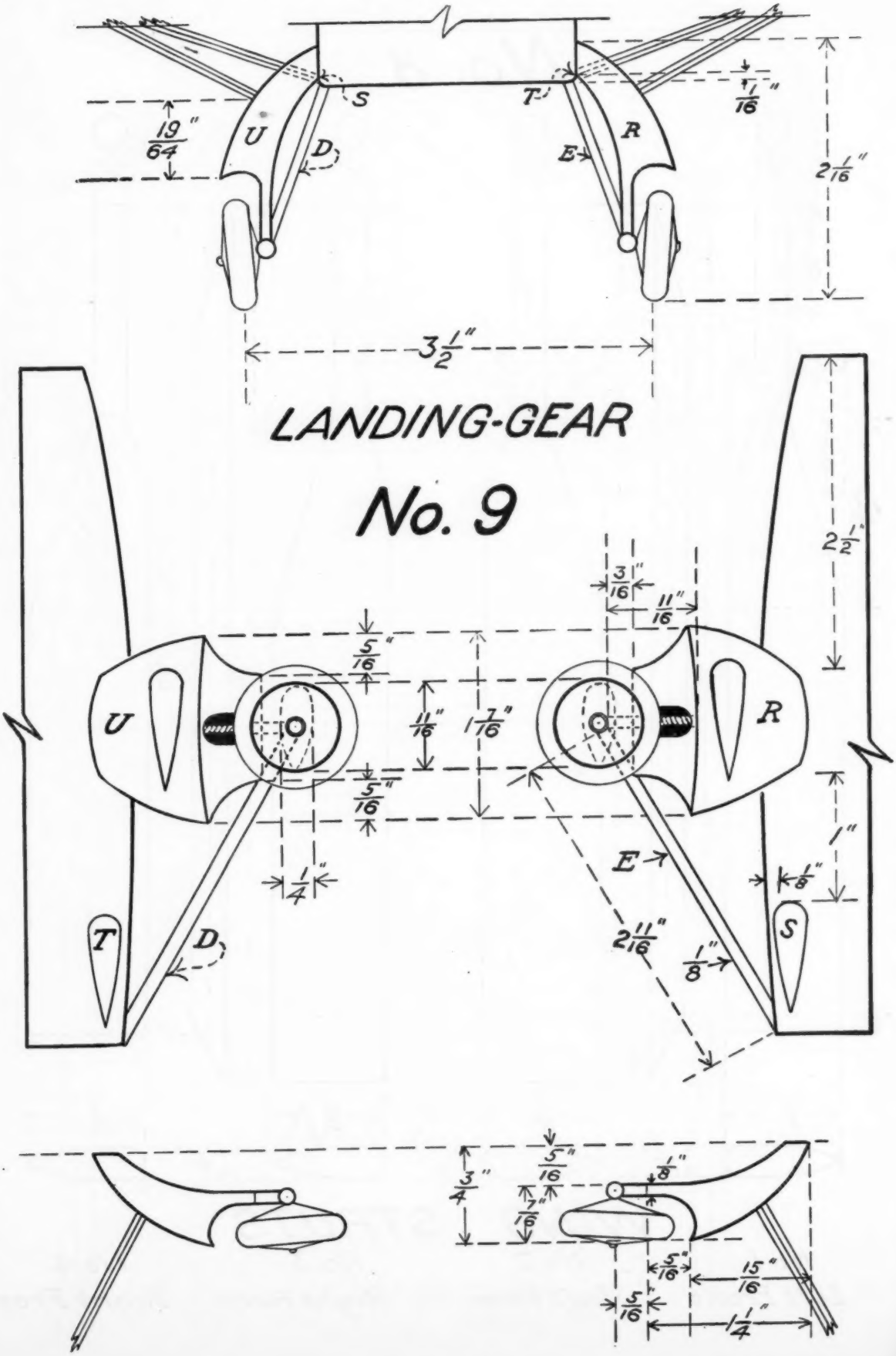

3"
1/2"
5/8"
3/16
J
No. 7
3 3/4"
1 1/16"
2 3/16"
3/8
15/16"
3/8"
Rudder
3/4"
1/4"
3/8
11/16"

No. 8

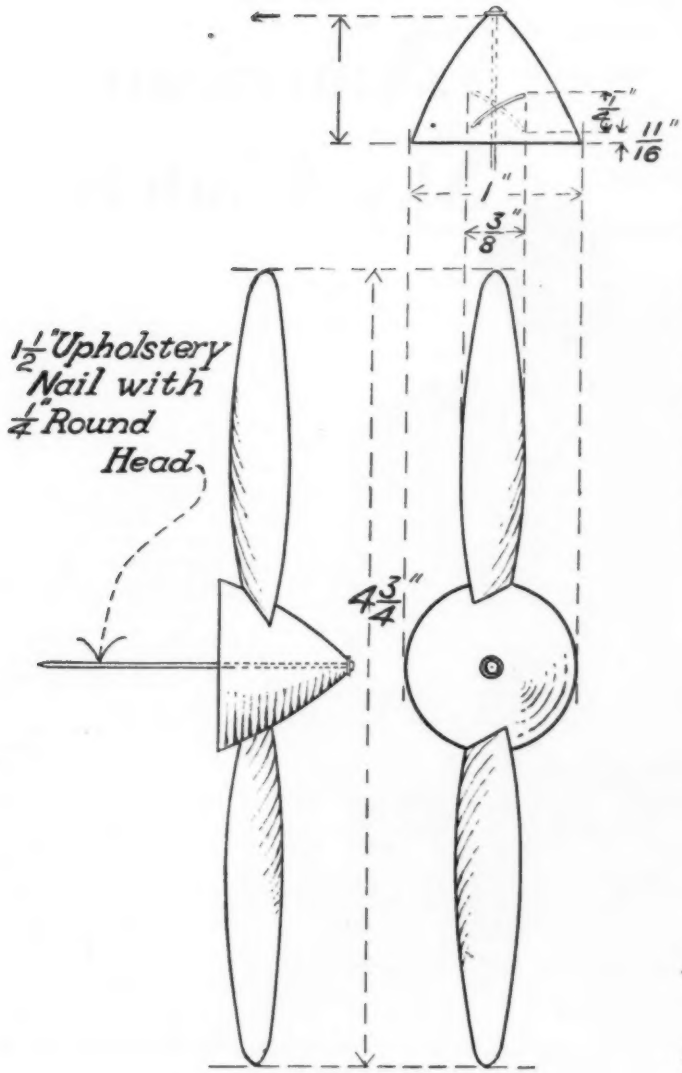


WING STRUTS

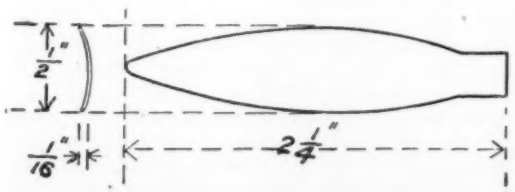
No. 1	No. 2	No. 3	No. 4
Left Front	Left Rear	Right Rear	Right Front

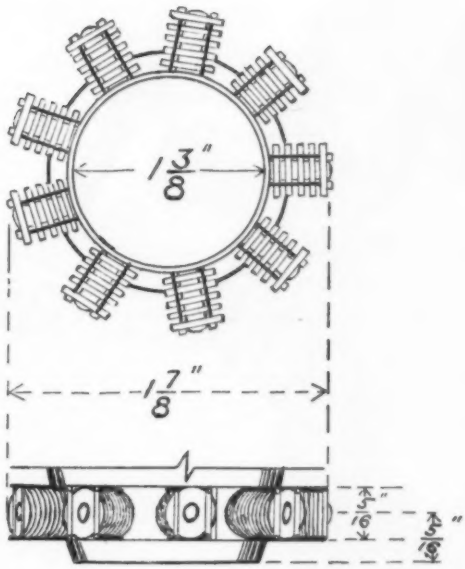

S
T
U
D
E
R
19/64"
1/16"
2 1/16"
3 1/2"
LANDING-GEAR
No. 9
2 1/2"
3/16"
11/16"
5/16"
11/16"
1 7/16"
5/16"
U
R
1/4"
T
D
E
1"
1/8"
2 11/16"
1/8"
S
3/4"
5/16"
1/8"
7/16"
5/16"
15/16"
5/16"
1/4"

No. 10

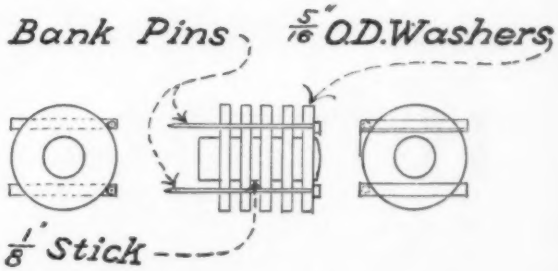


PROPELLER





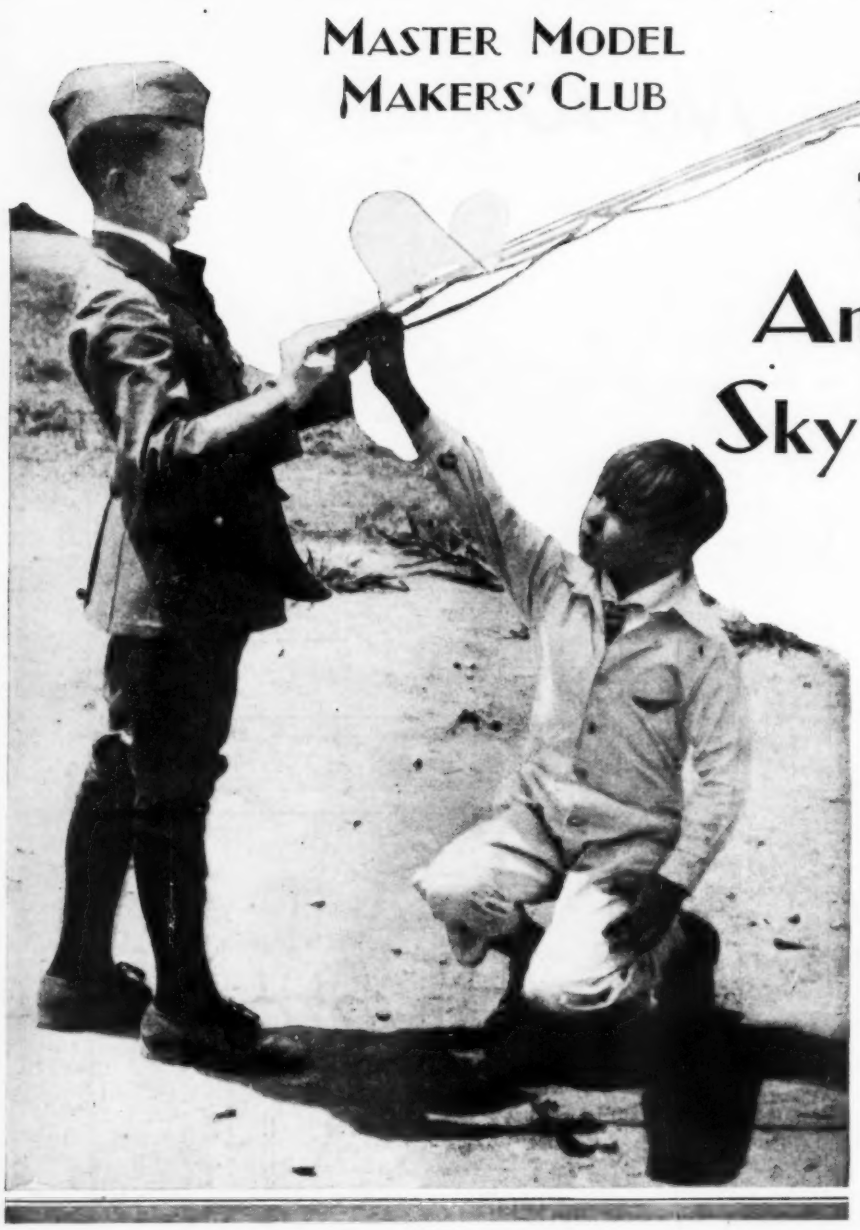
MOTOR



The Construction of the Cylinders Shown twice Actual Size

MASTER MODEL MAKERS' CLUB

The American Sky Cadets



Cadet Robert (Slim) Harris, in uniform, is watching Cadet-mechanic William (Buddy) Fisher as he fixes the engine on a twin-pusher

"HELLO, everybody. Allow us to introduce ourselves.

"We are the Master Model Makers' Club of the American Sky Cadets, one thousand of us all told, and we thought you would like to know that much of the joy that we get out of working in our laboratory is derived from helping you in your problems and experiments in model aircraft building. Come with us and take a peep at what we term 'our nest of future eagles of the air.' Today 'D' Group has the floor—let us explain. We are divided into groups of one hundred and each of these groups enjoys the privileges of the laboratory for one day each week. Five groups meet on Saturdays!"

The spokesman, Mr. Thomas Bulger, president of the Associated Aviation Clubs of America, opened the door of the laboratory and from within came the whir of propellers and scraping of sandpaper; hammering and the babble of voices which naturally follow when a hundred boys are grouped together reveling in such an industrial hobby as model-airplane building into which they have put their whole hearts.

The scene was typical of the daily happenings of the Master Model Makers' Club which each day delves into the intricacies of model-airplane building, experimenting with and designing new models which test the ideas and inventions of its own members and its fellow members throughout the organization.

At the far end of the room a group of five or six boys was experimenting with a combination of a Loening Amphibian and a Dornier "Super Wal." Others were putting the finishing touches to a Curtiss "Hawk." Some were working on the wing and fuselage of a scale model of the Keystone "Patricia," twenty-passenger-carrying plane. Still others were working on the pontoons of a flying model of a Supermarine S-5 which won the Schneider Seaplane trophy at Venice in March, 1928. Each and every boy was doing something.

Mr. Bulger entered the office in the southeast corner of the laboratory and above the chatter and working

noises of the boys he and Mr. Patten, secretary of the A. A. C., sat in the office and worked out plans for a new amphibidirigiplane—a combination of an amphibian plane and lighter-than-air craft — in which they are interested. Their explanation of the amphibidirigiplane was interrupted by a crash and a boy's voice which said: "Aw, shucks! Another undercarriage washed out! . . .

"Well, what do you expect? I told you you didn't have enough angle of incidence," was the admonition of his partner. The two boys were at the far end of the American Sky Cadets' experimental laboratory. One had just tried a model Lockheed-Vega which for the fifth time had washed out its undercarriage because of the speed at which it had landed. His partner in the model had stood out for more angle of incidence and consequent lower landing speed, while the first boy wanted just speed.

The ninety-eight other boys stopped work and leaned against the benches watching the test. Suggestions flew right and left, each boy vying with the other to show how much knowledge of aerodynamics he had gleaned from the instruction the members receive from Captain C. T. Harrison, chief instructor of the A. A. C.

Finally, the group was called together while the instructor took the model and explained exactly why it continued to crash and how to eliminate the cause. Mr. Bulger then opened the door of the junior class-room where the instructor carried out the morning's lesson in aerodynamics, demonstrating his lecture throughout with the aid of a blackboard and with a model of what his pupils termed a flying "Gazooka." Perhaps you can best get an impression of the class-room if it is likened to a hangar at any airport at which some new plane has landed and is surrounded by mechanics and others at the field. The questions and replies flew fast and furious.

"Why does that work?"

"How does that work?"

"What for?"

"Why?"

After the morning lesson the juniors were all grouped outside, preparatory to their journey to the flying field where the models were put through their flying tests. Let us return to the laboratory for a moment and explain what it is all about.

The laboratory is maintained strictly for the use of Sky Cadets. Here all and any inventions or ideas which members—no matter to what club or what part of the country they belong—wish to have tested, will be given a thorough examination and if found to warrant research work on the part of the laboratory such tests will be made to determine the worth of the invention.

When this examination is finished, a complete and confidential report covering the examination and its results will be made known direct to the Sky Cadet submitting the idea. Specifications as to materials and

NOTICE TO SKY CADETS

The National Advisory Board recently voted to change the name of this national organization from Macfadden Sky Cadets to American Sky Cadets. Hereafter, the organization will be known as the American Sky Cadets.

The Administrator

A view of one of the work benches, showing cadets working on models. They are, right bench, front to back: Walter Welsch, Henry Vitarelli, George Falk, Harold Collier, John Hauser, and Capt. C. T. Harrison. Left bench, front to back: William (Buddy) Fisher, Joseph Sciortini, Alfred Stewart, Lewis Vaillancourt and Jack Harris

descriptions for actual construction will be followed to the letter except in cases where the laboratory consultants feel that they can improve on the original instructions. The results of such ideas will be the property of the Sky Cadet who submits them.

To further guard against any infringement on inventions perfected in the laboratory, all laboratory consultants are under agreement with the American Sky Cadets to the effect that all and any inventions, ideas, plans, or specifications considered, obtained, or invented in the laboratory will not be claimed, used, obtained, or marketed by them at any time whatever, and that the results of all experimental work done in the laboratory will be kept by them in strict confidence at all times.

With such protection offered, Sky Cadets need have no hesitation in bringing their most cherished and confidential ideas to the laboratory for examination and construction.

This laboratory gives the Sky Cadet, who may not have the time or financial backing for experimenting, an opportunity to test thoroughly the worthiness of any and all ideas which he may have.

Any inventions of Sky Cadets which are considered worthy and which Sky Cadets wish to have financed and marketed, will be given every consideration by the American Sky Cadets in an effort toward this end.

This laboratory will be conducted out of a general expense fund of the American Sky Cadets and at no cost whatever to the individual members or to the clubs.

The laboratory is conducted by a staff of experts trained in model building and experimental work and is fully equipped with the finest tools and materials for experimental research work in model aircraft.

In addition to and in conjunction with the laboratory, the American Sky Cadets have their own supply depot and through this depot the Sky Cadet may purchase the finest model materials, American Sky Cadets' uniforms, complete construction kits for all the latest models, assembled model airplanes, outing shoes, air rifles, bicycles, as well as complete outfits for golf, tennis, baseball, football, hockey, swimming, hiking and other merchandise of interest to boys and girls.

A price list is issued to each member, listing the commodities which may be purchased by Sky Cadets at a ten per cent. discount. As new commodities are added, new price lists will be issued to members.

The object of the American Sky Cadets is to build physically and mentally better boys and girls through the study of aeronautics and model aircraft building. It is also to teach the importance of physical welfare and mental discipline as well as strength of unity through organization. While the flying and building of model airplanes are the fundamental activities, other helpful and practical diversions, such as hiking, swimming and other sports will be offered to the members

Join the American Sky Cadets

Here is the opportunity you have been looking for!

All boys and girls who are air-minded or wish to be, have an opportunity to join this wonderful national organization which is growing by leaps and bounds all over the United States.

If you are interested in building and flying model airplanes—if you wish to learn airplane designing—if you wish to grow up to be a leader in this great industry of aviation, then join the AMERICAN SKY CADETS and they will do the rest.

WE SHOW YOU HOW!

If you have already a club formed that is not doing as well as you think it should—if it has less than fifty members—if it lacks enthusiasm—if you need instruction as to club activities—make your club a part of the AMERICAN SKY CADETS and leave the rest to us!

If you have never built or flown a model airplane, you've missed one of the greatest sports known to boys. If you have, you will want to join the SKY CADETS because a membership in this great organization will bring benefits to you, as a member, which are beyond your wildest dreams.

Do you need advice? Do you lack the time, experience and money to experiment and perfect some of your inventive ideas? Do you sometimes wish things were a little cheaper so that you could possess them? Would you like to participate in city, state and international meets? Would you like to wear a beautiful pair of wings like army aviators do; have a beautiful membership certificate and a membership card to prove you are a member? Would you like to receive this wonderful magazine for one full year? Would you like to see your own picture in it with an account of what you and your friends are doing?

Would you like all these things? Then become an AMERICAN SKY CADET.

All these benefits are yours for less than the price of the magazine alone.

Fill out the coupon below. Enclose $1.50 and mail it to the Administrator, AMERICAN SKY CADETS, 1926 Broadway, New York City.

Dear Administrator:
You bet I want to be an AMERICAN SKY CADET, because I'm sure air-minded! Here's my $1.50.

Name.....

Address.....City.....State.....

Age.....

When I have obtained 5 more members please make me a Flight Commander and send me my gold wings when I have returned my silver ones.

A few Sky Cadets grouped outside preparatory to journeying to the flying ground where models are tested

A class of the Master Model Makers' Club of the American Sky Cadets is seen in the laboratory receiving instruction in aerodynamics from Capt. C. T. Harrison, chief instructor

of the American Sky Cadets from time to time. So you see that by combining work with play the cadets are banded together as a happy group of industrious fun-loving, healthy boys eager to carry out to the full the golden rule.

Now let us wander to the flying ground, and watch the members at their play-work of putting the models through a real flying test.

The senior members, as can be imagined, stroll away to one corner of the field, where by constant changing and interchanging of parts of the model, changing of propellers, and a thousand and one other things pertaining to the subject of flight, they thoroughly test a model that has been submitted.

Meanwhile the juniors, not yet being sufficiently advanced to delve into the finer points of construction and flight, amuse and instruct themselves by winding propellers, and flying-stick models, the air at times resembling inauguration day at some airport, with planes flying all over the place.

Suddenly a friendly argument arises.

"Bet you my machine can stay up longer than yours," says one boy.

"Bet you it can't," replies the one challenged.

Mr. Patten, official starter and timekeeper, is called into action and a contest is on.

The boys line up and the two principals immediately settle down to preparing their planes for the test.

There is a frantic rush by the others to offer assistance and so the camp is divided into "rival" sections.

"All set?" asks Mr. Patten. "Right. Best average of three flights. No. 1 machine ready?"

Bang! goes the starting gun and the plane is launched.

No. 1 machine had a canny pilot. He had given the wings lots of dihedral and lots of lift and soon the plane was up and cavorting over the field to every whim of the slight breeze that was blowing.

The propeller begins to slow down and the plane starts to glide, slowly, as if anxious itself to stay up all day.

Plump! The flight is over.

"Four minutes, thirty-two seconds," announces Mr. Patten.

The pilot of No. 2 machine was not a bit less canny than No. 1 and in addition to giving his plane lots of lift and stability had fixed his rudder so that the plane flew in a circle. This, however, proved its downfall; for in circling it hit the outstretched branches of a tree and crashed after two minutes, twenty-two seconds.

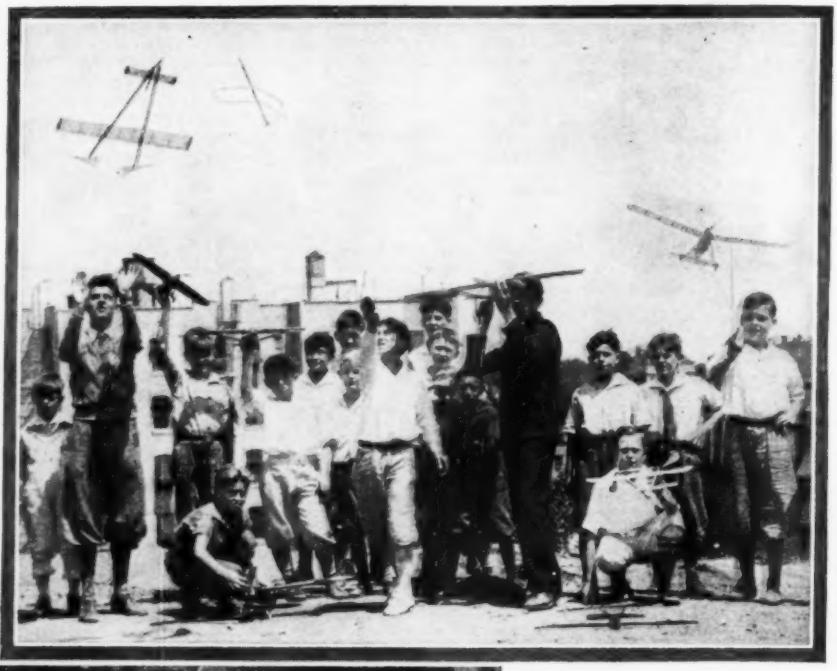
So the contest went on, No. 1 pilot finally proving that his challenge was well founded, his plane averaging five minutes and six seconds for the three flights.

This contest led to others, even the juniors entering the spirit of the occasion, which, incidentally, is a daily event among the cadets.

In addition to the daily activities mentioned, American Sky Cadets also are brought into close contact from the association point of view with actual airplanes and engines, a day being set aside at intervals when arrangements are made with the local airport authorities to allow the cadets to visit the fields, inspect all the planes and to be given practical demonstrations of the working of the various parts. One such visit was carried out last week when something like a hundred of the boys, well stocked with lunches, went to Roosevelt Flying Field for the day. Here they were divided into flights and each flight was sent off to a different hangar where the hangar manager took the boys through the building. Each flight went to every hangar on the field where, of course, the cadets saw and inspected practically every type of airplane that is being built in the United States. Their joy was added to when on numerous occasions the hangar manager allowed them to sit in the machines and work the controls. Furthermore, on this day in particular there were several noted air-men at the field, including Clarence Chamberlin. As can be imagined most of the boys went home suffering from "swan neck", which is brought about by trying to watch from ten to twenty airplanes flying around at the same time.

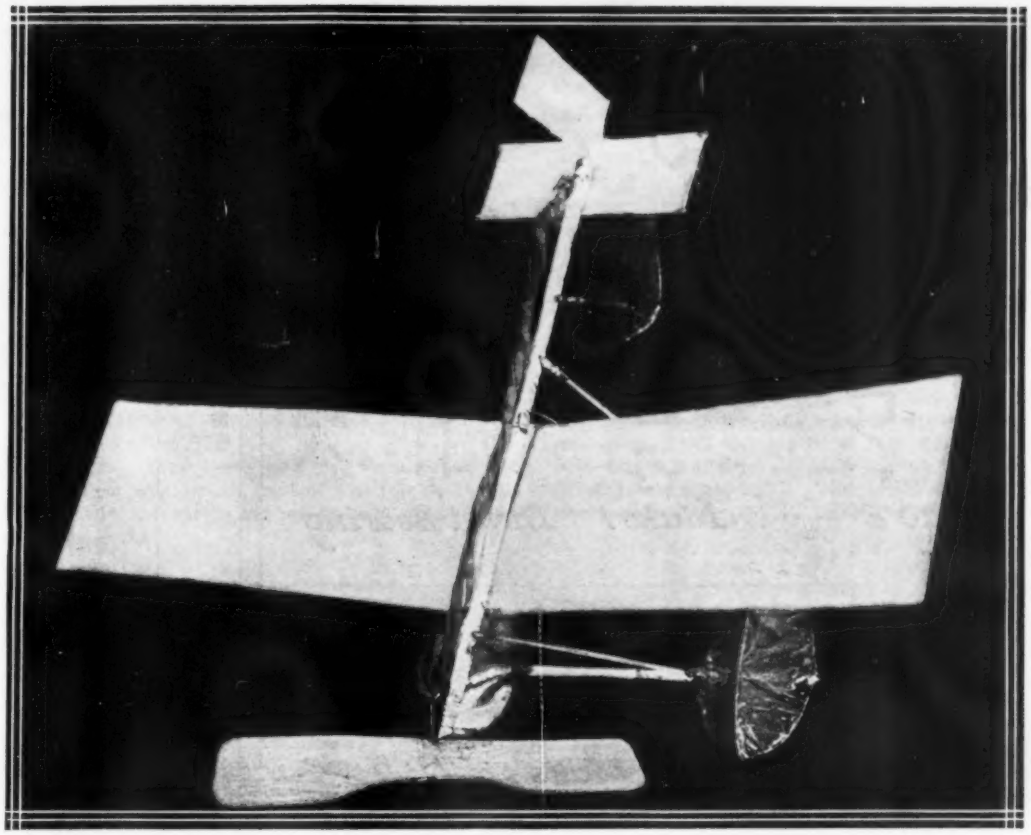
Another day was set aside for a visit to the Wright Airplane Engine factory at Paterson, New Jersey, where the Wright Whirlwind used by Colonel Lindbergh on his famous trans-Atlantic flight, was made. The boys were shown over the whole factory and the interest and knowledge gleaned is best left to the imagination.

It must not be thought that the Sky Cadets' activities are confined to the summer months, for in the winter arrangements are made each month for a moving-picture display of aircraft and aviation development both in the United States and foreign countries. These displays are arranged through the courtesy of the Chief of the Air Corps of the War Department. In addition, there are weekly classes of instruction on the theory of flight, aerodynamics, model aircraft construction and designing, etc. Every boy will find them profitable.



Off! The cadets are seen launching their models for an endurance test. Notice the twin-pusher in the top left-hand corner

Sky Cadets on the flying ground getting ready for the start of a flying test. Mr. Jack Patten is seen at the right about to fire the starting gun



How to Construct a Precourt R.O.W. Seaplane

Here Is a Scale Model which Has Been Successfully Flown by Its Designer

THIS Precourt R.O.W. Seaplane has been flown very successfully by its designer, Harry Precourt, a New York City Sky Cadet. The month of October lends itself very well to the construction of this model because of the ideal weather conditions which permit successful flying performances on outdoor lakes and ponds.

Construction

BEFORE starting work, study the drawings and photograph very carefully so that you can acquaint yourself with every detail of the R.O.W. which you are about to construct. When you have absorbed all the details from the drawings and photograph, you are ready to start. Be sure to have all the necessary materials at hand. Begin with the motor stick or fuselage. This is shown in drawing 1. You will note that the size of this motor stick is 1/8" x 1/4" x 9", with a 1/16" slope at the front end. Fittings 1, 2 and 3, as shown in same drawing, are attached with thread and ambroid in positions as shown in drawing which is full size. Set aside on work-bench to dry and, in the meantime, we will begin work on the wing which is shown in drawing 2 as the left half of the wing in full size. Do not make the wing in two separate panels but use the same measurements for making the right half of wing as you will note in the drawing.

Take the two leading and trailing edges and place them flat on your work-bench. The sizes of the two strips are 1/16" x 1/8" x 16". Now, take your bamboo strip and with a razor blade split off from it several 1/32" lengths of bamboo 3 1/4" long to be used as ribs. Shape these ribs as shown in drawing 2 by heating slightly over the flame of a candle or Bunsen burner until the correct shape is attained. Now ambroid these wing ribs into position as shown in the same drawing making sure to allow a 4" space between ribs.

The wing must now be given a dihedral angle of 1 1/4" at each end above the center, as shown in drawing 2. This is done by making a half break at the exact center of your leading and trailing edges and ambroiding the breaks at which the dihedral angle sets. Secure with ambroid fitting No. 5 to the leading edge of wing and fitting No. 6 to the trailing edge of wing. Set aside for at least one hour to dry.

No. 1

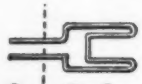
FUSELAGE AND FITTINGS

Make 2

Make 1

Thrust Bearing

Make 1



Make 1 of No. 9
Make 2 of No. 9-A
Clip on dotted line for 9-A fittings only

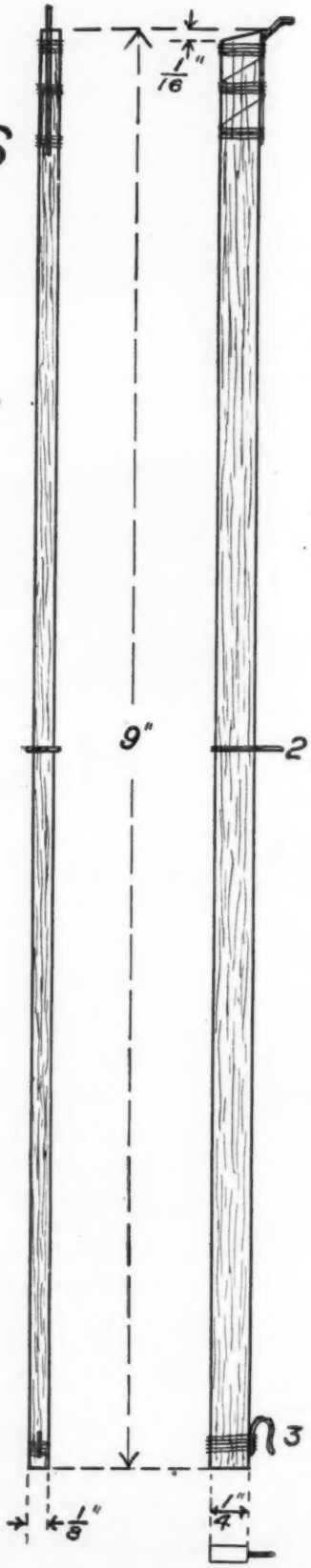
Make 1

Make 1

Insert through hole in propeller and bend as shown

Make 1

Make 1



Covering the Wings

THE wing is now ready for covering (top surface only). Take paste and with your finger tips or brush smear gently over the leading and trailing edges and along the top surface of each rib. Now you must work quickly by taking your piece of Japanese tissue and covering the entire top surface of the wing. Trim off all excess tissue at edges.

Wing Ribs

THE tail surface as shown in drawing 3 is made of 1/16″-square balsa. For leading and trailing edges use 1/32″ bamboo ribs 1 5/8″ in length (unbent) and formed to rib shape as shown in drawing 3 in the same way you did the wing ribs.

You will notice that these ribs are secured on the under side of the surface instead of the top as in the wing. There are three ribs spaced equally apart. Immediately over the center rib on top surface a piece of 1/16″ x 1/8″ strip balsa is placed and secured with ambroid. The tail surface is now ready for covering in the same manner as you did the wing, excepting, this time, the bottom surface only.

The Rudder

THE rudder is made up of 1/16″ square strips of balsa as shown in drawing 3 and covered on one side only (either side). Attach rudder to tail surface on top strip put there for that purpose, lapping over 1/2″ as shown in the drawing. Two fittings 9a, as shown in drawing 1, are attached with ambroid to positions as shown in drawing 3; then set aside to dry thoroughly.

The Pontoons

THE pontoons are made of 1/32″ bamboo. First take one piece 12″ long and over your candle flame shape to outline of large pontoon in drawing 4, tying ends securely with light but strong thread. Now take another piece 11″ long and over the candle flame shape the bottom and top parts to correspond with the drawing, securing at points A and B with thread and ambroid. Make two pontoons like this and after they are thoroughly dry take your 1/8″ x 1/4″ x 7 3/8″ strip and secure into position as shown in drawings 4 and 5, placing a pontoon at each end of your strip.

Now take a piece of 1/16″ x 1/16″ x 6 1/4″ balsa and secure into place with ambroid as shown in drawings 4 and 5. These pontoons are now ready for covering which is done in much the same way as the wing and tail surface except that the entire pontoons are covered by sections. Make sure that there are no holes in the tissue or at places where pasted.

The small pontoon is made in the same manner as the larger pontoons, the outside strip being 6 1/2″ long and top and bottom strips being 6 1/4″ long with small piece of balsa 1/8″ x 1/4″ x 1 1/8″ secured into position with ambroid and thread as shown in drawing 4. Cover with tissue in the same manner as other pontoons. Insert a piece of bamboo 1/8″ x 2 1/8″ into pontoon in position X as shown in drawing 4, first splitting and binding with thread as shown at Y. Attach fitting 9 as shown in drawing 1 in position Z shown in drawing 4, with thread and ambroid.

Yokes

NOW take the two large pontoons and prepare V yokes for them as shown in drawing 5; the front yoke is made of two pieces of 1/8″ bamboo 4 1/4″ long with fitting 8 of drawing 1 secured in place as shown at point D in drawing 5. The lower ends of these are inserted and secured to your 1/8″ x 1/4″ balsa cross-piece at positions F as shown in drawing 5. The rear V is made in the same way, of 1/8″ bamboo 3 3/4″ long but with fitting 8 secured at point E and lower ends inserted and secured at point G in the 1/16″ cross-piece with ambroid and allowed to dry thoroughly. After drying thoroughly, the pontoons must be covered with the dope and set aside to dry, being followed by the application of a good coat of float or pontoon finisher.

Necessary Material

2 pieces	balsa wood	1/8″ x 1/4″ x 9″
3 pieces	balsa wood	1/16″ x 1/8″ x 16″
2 pieces	balsa wood	1/16″ x 1/16″ x 36″
1 piece	balsa wood	3/4″ x 3/4″ x 6″
3 pieces	strip bamboo	
30 inches	No. 9 piano wire	
1	thrust bearing	
2	copper washers	
1 sheet	Japanese tissue—finest quality	
1 bottle	ambroid	
3 feet	"Championship" rubber—3/16″ flat	
1 bottle	pontoon dope	
1 bottle	float finisher for pontoons	

Propeller

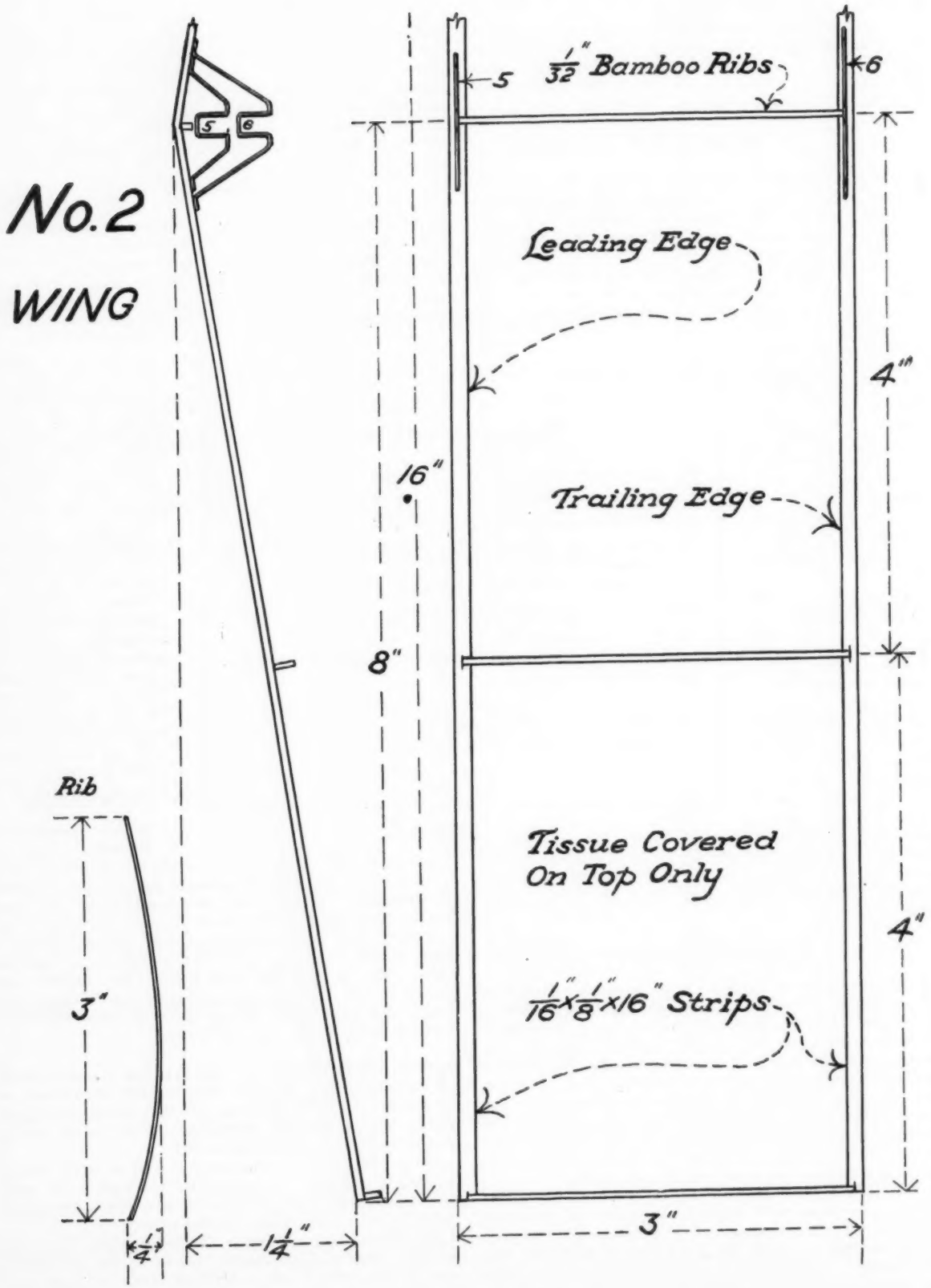
THE propeller is carved from a 3/4″ x 3/4″ x 6″ balsa block as shown in drawing 6. Fitting 7 as shown in drawing 1 is inserted as noted in drawings 1 and 6. See that washers are in place before inserting propeller hook through thrust bearing.

Attach four strands of 3/16″ x 8″ rubber to the S hook which is fitting 4 shown in drawing 1 and the other ends to propeller hook 7 after passing through fitting 2; and assemble as in photograph. Balance pontoons and wing until proper glide is attained. Now you are ready to fly your little craft.

YOU will often find that the first few attempts to fly a model that has just been completed are not as successful as you might hope. This is caused to a great extent by not properly balancing the propeller and by not winding the rubber sufficiently.

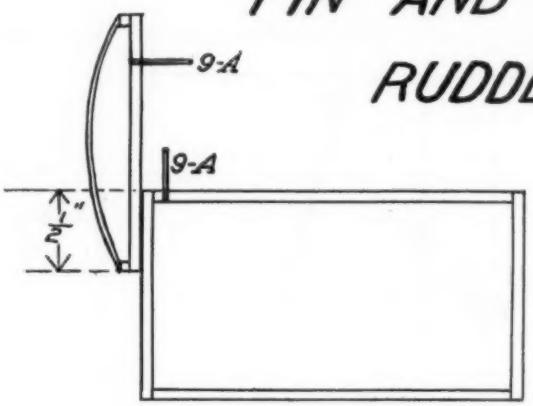
Do not be afraid, if necessary, to add an extra strand or two of rubber. In practically all models the additional power thus gained is more than ample to counterbalance the added weight of the rubber.

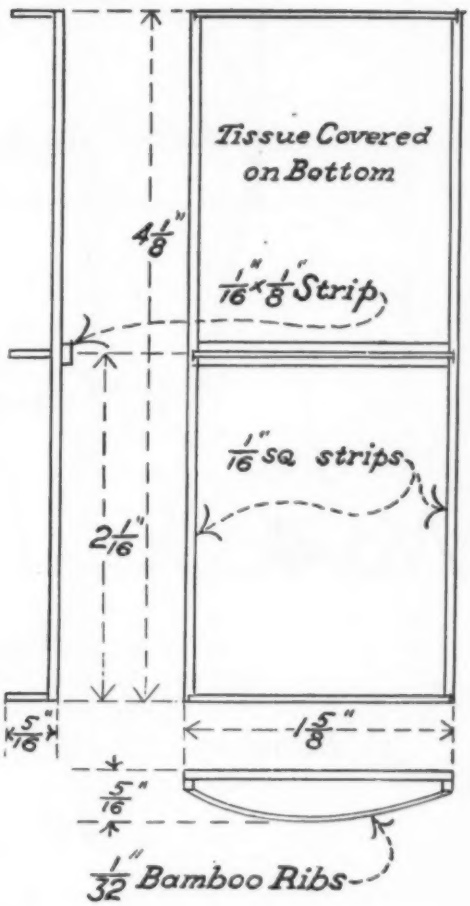
The same thing applies to the balance and alignment of the wings and stabilizer. Often in the assembling one or the other is set a little off line. In most cases the misalignment in the model will not count as it would in a plane proper.


No. 2
WING
5
6
1/32" Bamboo Ribs
Leading Edge
Trailing Edge
16"
8"
4"
4"
Tissue Covered
On Top Only
1/16"x1/8"x16" Strips
Rib
3"
1/4"
1 1/4"
3"

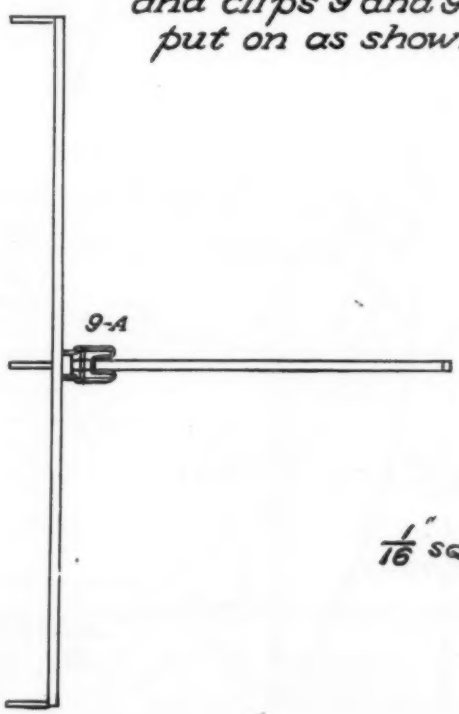
No. 3

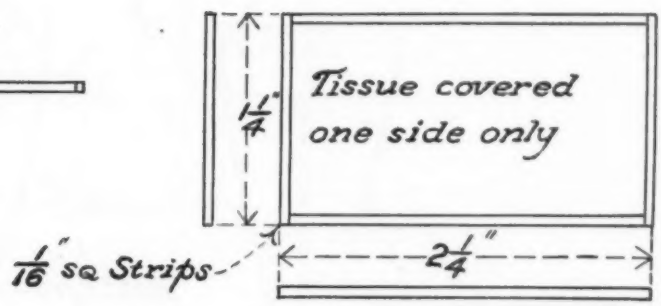
FIN AND RUDDER

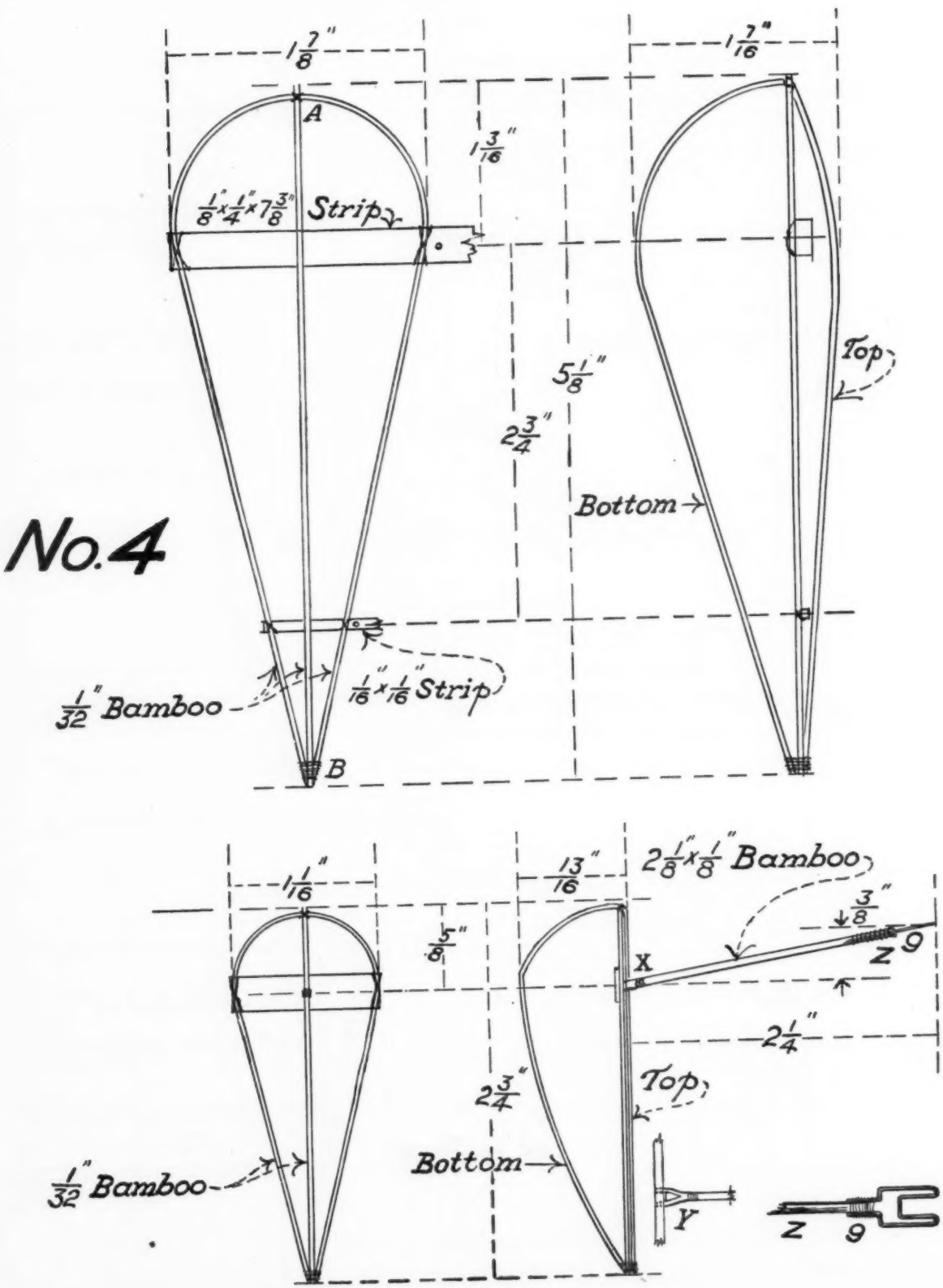




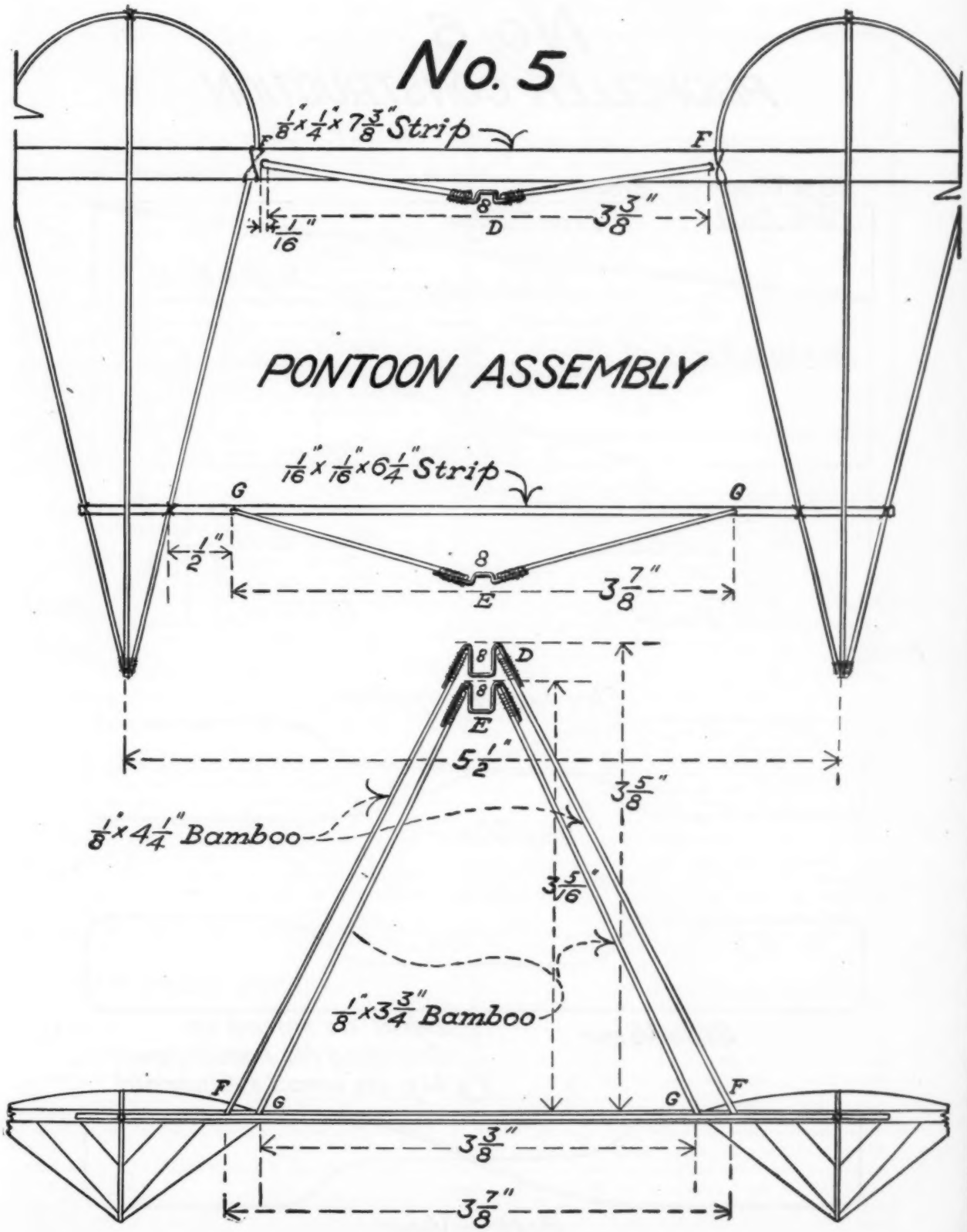
The Fin and Rudder are Ambroided together and clips 9 and 9-A put on as shown



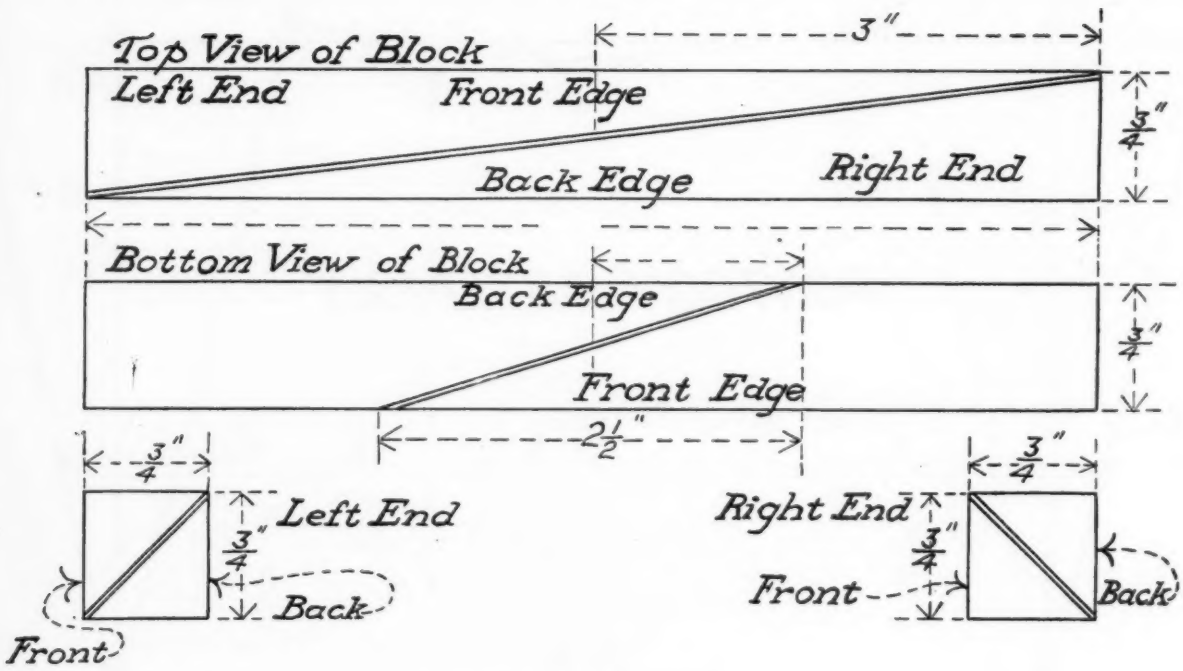


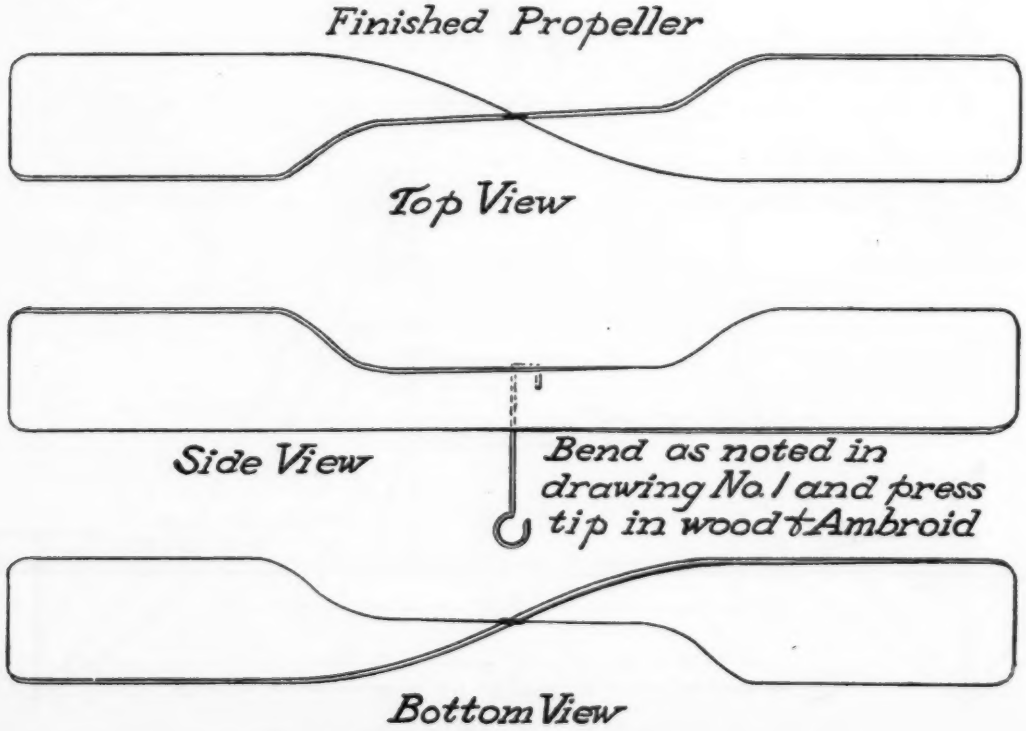


PONTOON DETAILS


No. 5
1/8" x 1/4" x 7 3/8" Strip
F
1/16"
D
3 3/8"
PONTOON ASSEMBLY
1/16" x 1/16" x 6 1/4" Strip
G
G
1/2"
E
3 7/8"
D
E
5 1/2"
3 5/8"
1/8" x 4 1/4" Bamboo
3 5/16"
1/8" x 3 3/4" Bamboo
F
G
G
F
3 3/8"
3 7/8"

No. 6
PROPELLER CONSTRUCTION





Why I Am Interested in Aviation

Eleven Hundred Boys and Girls Wrote Us Letters in This Thrilling Contest, from Which the Three Lucky Winners Have Been Picked and Are Announced at This Time

FOR the past six weeks letters from our readers have been pouring into MODEL AIRPLANE NEWS from every state in the Union as well as Canada and Mexico. Never before has a contest been so popular and the judges have been kept busy reading letters night and day.

The contest closed on August 1st, at midnight, and the final count of letters submitted reached the astonishing number of 1102. One can understand the difficulty of selecting three winners out of such a number, inasmuch as most of the letters were interesting, instructive, well-written and entertaining.

The judges finally finished and after many days of consideration announce the following winners:

FIRST PRIZE
DONALD LEIGH (16),
21 Alton Street, Portland, Maine

SECOND PRIZE
RAYMOND L. LARSON (14),
3151 Avenue B, Council Bluffs, Iowa

THIRD PRIZE
EDMUND WERKNER (16),
109-11 Pinegrove Street, Jamaica, N. Y.

As was announced in MODEL AIRPLANE NEWS, Donald Leigh will receive a scale model of an amphibian plane, which will be shipped to him immediately. Raymond Larson will be given a copy of the book "Building and Flying Model Aircraft", which is on its way to him, while a one year's subscription to MODEL AIRPLANE NEWS, as well as a year's membership in the American Sky Cadets, will go to Edmund Werkner as third prize winner. Congratulations.

Space allows us to print only the first prize winner's letter.

FIRST PRIZE WINNER

"For I dipped into the future, far as human eye could see,
Saw the Vision of the world, and all the wonders that would be;
Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly bales.
Heard the heavens fill with shouting, and there rained a ghastly dew
From the nation's airy navies grappling in the central blue."

These few lines of poetry were written a long time ago; to be exact in 1842, and eighty-six years have elapsed since the penning of this verse. Lord Tennyson had a moment of vision when he wrote this wonderful prophecy, which those who lived in that time in all probability thought was only a poet's dream.

Today it is a realization—the world has found its wings!

Kipling wrote in 1905 of his prophecies "With the Night Mail" for the year 2000 A. D., and now we find his predictions being fulfilled less than twenty-five years afterward.

This generation has read in history and oft heard our forefathers tell of the great advancement in present-day transportation facilities over those available in the nineteenth century. Transportation is civilization and links the continuous flowing of a stream wending its way to the sea; civilization is ever advancing. The prophecies of past generations are the realities of today. Aviation is fast becoming the recognized mode of transportation.

In every section of the world there is daily proof that aviation is progressing with amazing rapidity. It is the fastest growing industry in the world. Dozens of successful airplane factories are producing ships at tremendous rates. Many of them are oversold six months to a year ahead. Aircraft fields, factories, transportation companies and air routes are being established all over the United States.

After pioneering the original air-mail line of 228 miles between New York and Washington and the transcontinental air-mail line from New York to San Francisco, the United States Government has turned over all the air mail throughout the United States to private contractors, thus showing its confidence in commercial aviation of today.

Speed of over 300 miles an hour has been attained and an altitude of over eight miles has been reached. Government planes have flown completely around the world. The Atlantic has been crossed and recrossed in non-stop flights. Non-stop flights from New York to the Pacific Coast have been accomplished. The Pacific Ocean has been conquered. A flight has been made clear across the top of the world, over the North Pole, and new records and new developments are being made so rapidly that it is impossible to keep (*Continued on page* 48)

New Contest

IN this issue of MODEL AIRPLANE NEWS we announce the winners of our last contest "Why I Am Interested in Aviation". In the November issue we are starting a new contest which will be one of the most fascinating ever held by a magazine. *Here's a chance to win cash prizes!* MODEL AIRPLANE NEWS will give away $100 for prizes in this new contest. Get your November copy of MODEL AIRPLANE NEWS early—on all news stands October 23rd and only fifteen cents.

By
LAURENCE
DONOVAN

The FLYING BLACK SHEEP

ON Tommy's sixteenth birthday cattlemen and sheepmen on Saddle Mountain are involved in a feud. Cattle have been poisoned and sheep killed. Enmity breaks out between the Carews and the Wickers.

Tommy Carew and Tad Wickers, lifelong friends, are air-minded and plan to own a plane some day. Their friendship is broken when Tommy's father accuses Mr. Wickers of shooting him. Later Mr. Wickers is killed and Mr. Carew is accused of the murder and jailed.

Tommy admits seeing his father near the scene of the murder and earns the nickname of "Baa-baa Black Sheep". He shoulders the family burdens in his father's absence. A plane crashes near-by. Tommy reconstructs it and builds a flying field. Later he goes to flying school and learns to fly. He returns to find his plane in flames and believes Tad Wickers did it.

Tommy purchases another plane with money sent by a mysterious friend and begins transporting supplies for the valley's inhabitants. A black plane throws bombs down at the sheep and kills thousands. Tommy is accused and is tied and left to die in the path of the black plane. Some one unties him in the dark and flees.

Tommy offers to go after the black plane into a mysterious valley he has discovered to be the headquarters of a gang whom he believes responsible for missing cattle. He lands in the valley and is captured. He learns that Tad Wickers' father was killed because of a gold mine he discovered. He manages to get a gun and plans to fight for his life before he permits the gangsters to throw him out of the speeding plane as they plan to do the next morning.

IT had come. Tommy heard a final shouted word from the man whose knee was close above his head. The gangster bent over him. The space was cramped. His would-be murderer had to slip from his seat to get a hand under his shoulders.

"Now!"

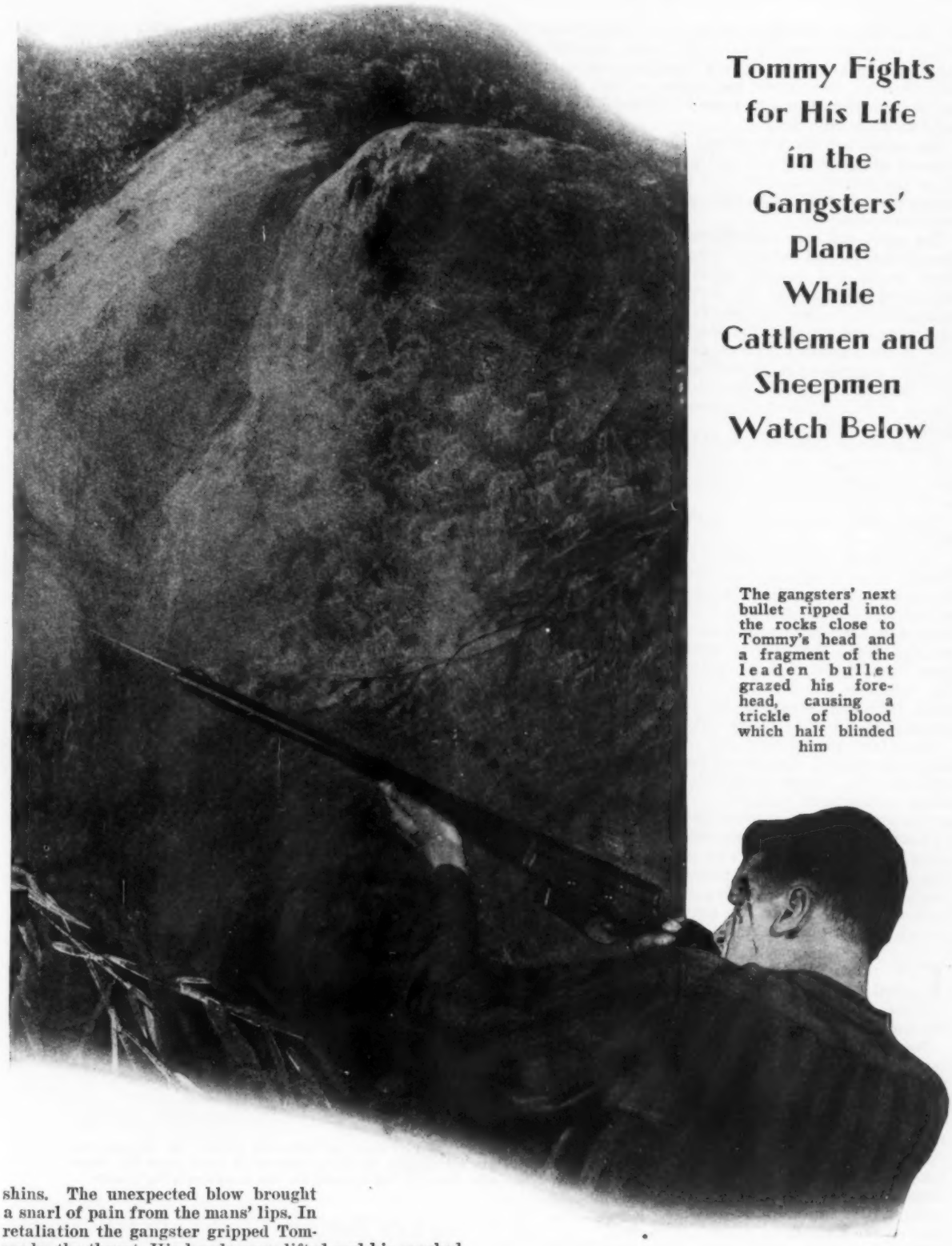
The one shouted word rapped back from the pilot's lips.

Tommy felt himself being lifted, his body close to the gangster's side. In another two seconds he would go hurtling into space.

Tommy was forced back, his body bending over the rim of the cockpit. Below him he had one glimpse of Splitneck Canyon, lying like a green slice in the mountain more than half a mile under the speeding Golconda.

He doubled up his knees and kicked the gangster's

Tommy Fights for His Life in the Gangsters' Plane While Cattlemen and Sheepmen Watch Below



The gangsters' next bullet ripped into the rocks close to Tommy's head and a fragment of the leaden bullet grazed his forehead, causing a trickle of blood which half blinded him

shins. The unexpected blow brought a snarl of pain from the mans' lips. In retaliation the gangster gripped Tommy by the throat. His hands were lifted and his crooked mouth leered cruelly into Tommy's tense face.

This was the moment for which Tommy had been waiting. He had played for it. He had wanted to get the man's hands raised. Now he slipped his right wrist from the supposedly binding ropes and his fingers slid inside his shirt. Engaged in the act of forcing Tommy's resisting body over the edge of the cockpit, the gangster failed to observe the movement of Tommy's hand.

Tommy's thumb slipped the safety catch of the automatic, without trying to pull the gun outside. He writhed suddenly, twisting over until his left side was pressing the gangster's ribs.

Everything depended on whether the gun was loaded and if there was a shell in the firing chamber. Tom-

my squeezed the handle trigger. The flame from the muzzle scorched Tommy's own side under his shirt. The gangster's face knotted into a horrible contortion of pain, then his eyes glazed, his fingers relaxed their grip on Tommy's throat and he sagged backward, his falling body striking the pilot.

The pilot, bewildered, turned sharply around. His widened eyes had a frightened look. Through the thunder of the propeller the crack of the automatic had been almost lost, buried as it was, with its muzzle in the gangster's ribs.

The pilot did not understand what had happened. The victim he had believed helplessly bound and drugged in the second cockpit was on one knee, facing him with blazing eyes. The pilot was looking into the black hole of the automatic. There was no doubt but what the white-faced lad clutching the handle was willing to send him where his companion had gone.

The man who had been shot had rolled over and his eyes, wide-open in death, seemed to look up at the pilot in mute surprise.

"Get back, down—back to the field."

The gang's pilot could read Tommy's lips if he could not hear the words. He glanced once more at the unwavering muzzle of the automatic. He saw death staring at him from that little, round hole. Facing forward, he pulled the Golconda into an almost vertical bank and straightened out on an angle for the hidden valley.

The plane passed over the rim above the valley. Stealing a look over the side, Tommy saw a dust cloud arising from a narrow pass at the opposite side of the valley. It looked to be at least two miles away. The cattle drive was on. The gangster chief of the foreign tongue had said he was going out with the others when the cattle moved.

THE pilot felt the automatic poked between his shoulders.

"Land at the cabin—then go out and keep goin'!"

Tommy shouted the command into the pilot's ear. The pilot grinned. But the reason for the grin was abruptly removed. Tommy had reached over and grabbed the pilot's pistol from its holster.

The Golconda glided down, touched its tail, and came to a stop. The pilot climbed out of the cockpit. He said nothing until he was on the ground.

"Gee!" he said. "But you're some travelin' kid. But take a tip. Get th' hell outa here before Hunky Joe hears o' this."

Thus he gave his grudging admiration of Tommy's nerve. Then he set out at a swift pace across the valley toward the trail taken by the cattle.

Tommy had kept the motor idling. He climbed into the seat and got his hands on the familiar stick. He watched the disarmed pilot disappear on the far side of the valley. Then he slipped the partly emptied belt from the machine gun and replaced it with a full one. Five minutes later he was lifting the nose of the Golconda over the edge of the hills in the direction of the cattle trail.

Sticking to within 200 hundred feet of the jagged range, Tommy passed over the narrow slit through which the cattle were traveling. He had one fleeting glimpse of the moving animals and the men behind them. He counted eight of the gangsters. There might have been more, he thought, and then there was the pilot who had not yet overtaken the drive.

Tommy saw that he could not work the machine gun effectively while the cattle and men were in the pass. It was impossible to get the plane into position. But a mile or so below the pass widened into a short plateau which the cattle would have to cross. The

Tommy did not wait to sight the pistol. He slipped the safety catch and let fly a stream of lead from the muzzle. One of the bullets hit the gangster's right arm

space afforded a fairly smooth landing.

Tommy brought the Golconda down and idled his motor. He glanced at the fuel gauge. It told him nothing. It had been

shattered by the machine-gun bullet on the previous night. The feed line had of course been repaired and Tommy had to take a chance on the gangsters having filled the tank from their own wrecked plane at the time.

The gangsters were not long in appearing, or rather the first of the cattle came from the pass, spreading out as they reached the wide place. Then Tommy found to his dismay that he could not work the machine gun from the plane's position, and hope to beat off the gangsters without killing some of the steers. The men, he knew, would be quick enough to shield themselves behind the animals.

Revving up the motor, he taxied the Golconda for a take-off.

"Crack-zip-whee-ee!"

The report of the rifle from the mouth of the pass and the wicked whir of the bullet as it struck the metal nose of the Golconda came together. Then lead rained through the wings, sang from the body of the fuselage and threatened to shatter the prop or puncture the tanks.

To work the machine gun was impossible with the cattle almost directly in front of its nose and, anyway, Tommy was sufficiently busy with the controls. Every second he expected the prop to go. Then he would have to shoot it out with the gang with only the pilot's pistol and the remaining shots in the other automatic. He wouldn't have a chance.

THE Golconda flashed ahead, running nose-on toward Tommy's attackers. At last he got the lift of the tail skid and pulled the stick. He was sheltered now from the bullets by the nose of the Golconda, but he held his breath awaiting the tearing smash that would mean his prop was gone.

Suddenly the Golconda was clear and Tommy took a chance and risked stalling, as he fought for every inch of altitude he could gain before passing over the shooting gangsters. As he crossed above the line of rifle fire, it felt as if some one had tapped him sharply on the left knee. The touch was so real that Tommy glanced at his leg. There was no pain, but a numbness seized the calf of the leg and Tommy knew he had been hit for the first time.

Tommy abandoned the idea of stopping the cattle drive. Anyway, he was pretty sure the gangsters would leave the cattle and return to the cabin after seeing him in the plane. They would meet the pilot and get his story.

But it would be nearly an hour before they could reach the cabin. Tommy was sure there was something about the cabin that would give a clue to the mystery of the gang's presence and the inexplicable attacks on Splitneck Canyon. He tried stretching his wounded leg and found that it would work, although it was beginning to throb with pain.

While it would require an hour for the gangsters to return, in less than five minutes Tommy had the plane on the valley landing-field. He took time to measure the gas in the tank. It was two-thirds full. He left the motor idling for a quick getaway and made his way into the cabin.

Some supplies had been left in the cabin. In one corner there were two rifles and part of a box of am-

munition had been left on a shelf. Tommy remembered that the two men who had "taken him for a ride" in the plane were to have returned and stood guard.

But more interesting than the guns were the half-dozen picks and shovels that lay at one side. These were bright with recent use and blue clay still clung to the shovels. Only prospectors in the hills carried picks. The men had mentioned a mine.

But why, if they had found a mine, was it necessary to clear the sheepmen and cattlemen off the Splitneck Canyon side of Saddle Mountain?

Tommy saw that one of the rifles was loaded, and slipped extra shells into the pocket of his leather flying coat. He set the rifle conveniently near the door. He looked out and made sure that the prop of the Golconda was still turning slowly, the motor idling. As yet there was no sign of the returning gangsters.

"Hunky Joe killed him to steal his mine! He . . ."

After a few minutes of searching, Tommy had decided there was nothing in the cabin that would afford a direct clue to the murderous plot of Hunky Joe's gang. He examined the clay crumbling from the shovels. He did not remember any soil of that kind around Saddle Mountain.

Tommy was about to give up the search, believing he had seen everything in the cabin. He had picked up a shovel and set it down. Turning, his foot struck a small board, the kind known in the mountains as a "shake." It was in the form of a long shingle and had been split with an ax from a cedar length.

The board fell over. Happening to glance at it, Tommy started. Scratched deep in the side of the board, evidently with the point of a knife, were several letters. Tommy carried the shake to the door where he could read it.

The scratched letters read:

ART WICKERS—LOCATION NOTICE—Sept. 14, 1928

The date as much as the name brought the flash of understanding to Tommy. "Sept. 14?" That was only a few days before Wickers was shot from ambush near the poison spring below Splitneck Canyon. Or had he been shot there? Might he not have been killed somewhere else and the body brought to that spot?

Wickers had located a mine: Tommy knew well enough what that notice meant. When a prospector or any other person discovers gold or other valuable minerals, the law provides that they put up notices of their discovery. That gives the finder the right to the property until formal claim can be made and filed legally at the nearest land office.

Perhaps in this cedar "shake" lay the proof that his dad had not murdered Wickers. Tommy took the board to his plane and slid it under the seat. He came back to the cabin and picked up the rifle. His eyes scanned the side of the valley above the cabin. That side lay nearest to the ridge that cut off the end of Splitneck Canyon. Somewhere through this side must come the tunnel.

Tommy's mind was working fast. Wickers himself must have been the first to find that tunnel. He must have come through to this valley. Probably the mine, or whatever it was that he had posted, was somewhere near the tunnel.

The slope of the ridge along here was varied. Part of it was rock. Some bushes grew here and there. Tommy's eyes swept the hill, then they came back and centered on a smooth strip of grass that ran up the side of the hill and seemed to disappear behind the green, brushy growth.

Glancing at his watch, Tommy saw that he had been at the cabin for nearly fifteen minutes. He would not have time to explore the hill and get the Golconda out before Hunky Joe's gang returned. He was sure they would come back as soon as the pilot told his story.

The slope of the grassy strip that ran up the hill was not steep. If he were up there, he could see across the valley. Of course the gangsters could get into the bush and play a bushwhacking game, but, with the Golconda up there, if it came to a pinch, Tommy believed he could shoot the plane down the slope and take off even in the face of gun-fire. It was worth trying. He wanted to find that mine.

Several times he thought (*Continued on page* 43)

MACFADDEN AVIATION ADVISORY BOARD

IN this department each month the Macfadden Aviation Advisory Board will endeavor to answer all questions concerning model building and aviation in general. Address all questions to

The
Macfadden Aviation Advisory Board,
MODEL AIRPLANE NEWS,
1926 Broadway,
New York City.

Enclose with your letter a self-addressed and stamped envelop to facilitate an answer, as space is limited and all letters can not be answered in these pages.

WELL, here we are again, boys, just landed from our first "Contact Patrol" with you fellows, and recovering from the many bumps your barrage caused us in the hundreds of letters received. However, we are still smiling and highly delighted at the result, which reveals to us that we are on the right road to gain a large and happy family of followers.

Before going any further we would like to say to all those we can not answer individually in these columns that it was more than a pleasure to receive so many letters in which our readers, ranging in age from eight years to thirty, showed such remarkable grasp of aeronautics as applied to models.

We have received numerous requests for lists of all War-time aircraft, both of the Allied and Central Powers, and for photographs of them. The board wishes to state that they are working on this list and immediately after it has been prepared they will forward it to those who ask for it. Naturally we can not promise to let you have photographs of all the planes, but, if possible, we will let you know where you can obtain them.

Also, we were swamped with requests for plans of a model amphibian, and here is where we reveal our surprise to you. There are no manufacturers and supply depots, to our knowledge, who stock or sell plans for a model amphibian.

However, the editor of MODEL AIRPLANE NEWS decided that where possible at all he would fulfil the wishes of the hundreds of boys—so he at once gave instructions to the staff of the American Sky Cadets' experimental laboratory to work out plans for a model amphibian! These plans will be published shortly in this magazine!

The response to the Ford Tri-motor job was enormous.

There was also an avalanche of questions concerning plans for a model Curtiss "Hawk," and to these questions the editor replied by publishing the full-sized plans for this model plane. You probably have noticed how much more the full-size plans facilitate your work on the models, and also save the time and expense of having to send away for full-size plans when only smaller scale details are published.

The Board still has hundreds of letters under consideration, and these contain many hints and suggestions. Good! Keep it up, boys, and by this means we can more quickly get together.

Now to a few letters and answers:

Gentlemen:

On model airplanes, one has to put dihedral in the wings to give them more stability.

Now the thing I want to get straight is this: on blue prints the dihedral angle is given in degrees. How does one work this out?

I hope you have the best of success with your club.

Yours truly,
ROBERT W. BROWER,
79th and Amsterdam Ave., Hotel Lucerne
New York City.

Answer:

Unless you are an expert mathematician you will find it hard to get dihedral angle degrees applied properly to a model. We suggest that you figure the dihedral by placing a ruler horizontal with the fuselage and then gauge your dihedral according to the blue prints furnished you.

Dear Sirs:

I would like to know if there is any way to prevent the wings from warping on tractors and R.O.G.

Yours truly,
ARTHUR HOLDEN,
33 Vine Street, Meriden, Conn.

Answer:

This is impossible to prevent. Warping will take place in the best of model airplane wings. You sometimes can prevent them from immediately warping by weighting the wings just after giving them a coat of dope.

(Continued on page 42)

The Golden Swamp

(*Continued from page 8*)

edge so that he would have hard sand upon which to set the wheels and tail skid of the DeHaviland. The beach was not wide and the growth that fringed it would have ripped the plane to shreds, had a landing in it been necessary. There was a narrow strip of white sand—then the gently rolling waves.

But the sand that was so white was also soft and soft sand would mean a turnover, unless a pancake landing was made.

Wisps of fog sifted through the wings. Fred, his lips tightly pressed together, sat tensely in the rear cockpit. He felt the tail skid strike, then the wheels. The plane was rolling now.

THE fog was blown clear, ahead of them. The right tire splashed through water. Then, suddenly, Fred heard Squint call out sharply.

"Hang on, Fred, we're going to hit it!"

Almost instantly the shock came. The left wheel struck some object unseen by Fred. The plane bounced badly; it was doing better than thirty miles an hour at the time. Fred's head was jerked back sharply. He protected it from battering against the fuselage lining by throwing up an arm.

There was a sharp report. The fog had closed in again. For several seconds Fred thought that the plane was going over on her nose. But she did not. Instead she turned toward the soft sand and rolled on. As she struck the white stuff, she tilted forward. Her propeller splintered into pieces!

But she failed to go up on her nose. Her tail assembly rose four or five feet off the beach, hovered a second and then dropped back. Squint cut the switch and climbed out of the front cockpit. Fred followed suit.

"Prop's gone and the left tire blew!" Squint cried. "Our first bit of bad luck, Fred."

He checked his words abruptly, his gray eyes narrowing Then he started to run back toward the plane. Fred was running along behind him. The fog blotted out the ship from their sight, then cleared again. Squint twisted his head and shouted back to Fred.

"The tide's—coming in—fast!"

Fred groaned. They reached the ship. The gentle roll of a wave was under a wing-tip of the plane. Water eddied around the tailskid and the rubber of the wheel that had gone flat was sinking into the sand.

"Work fast!" Squint ordered grimly. "We'll get the other prop on the shaft. We can't roll her up. Let the tire stay flat and I'll taxi her up under power. But we've got to move!"

They worked for the next thirty minutes. Soaked in perspiration, working against time, they got the spare prop from the compartment back of the rear cockpit, removed the splintered one and replaced it with the good stick of wood. And all of the time the wheels and tail skid of the ship were sinking more rapidly in the soft sand.

BUT finally the prop was in place, geared to the shaft. Squint climbed into the front cockpit, snapping the starting switch. Throttled down, the engine rumbled through the exhausts.

WHAT DO YOU LIKE?

MODEL AIRPLANE NEWS is your magazine! It is published for you but it can not contain the things you wish unless you tell us what you prefer. Below are listed a few of the questions we would like you to answer. Check off the items you prefer.

Do you like fiction stories?

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Do you like fact articles?

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Do you like the model plans?.....

Do you like pictures?.....

Would you prefer having more plans of models and no fiction stories?.....

Mail this coupon to us. This is your magazine!

THE EDITOR.

"Hold the tail assembly down!" Squint shouted to Fred. "Let's go!"

Fred moved out into the salt water. White foam swirled about his boots. The wash from the throttled propeller tore at his clothes and his helmet. He straddled the fuselage fabric, just forward of the tail assembly. He saw Squint nod his head.

Then the roar of the exhausts increased in tone. The plane trembled and the tail skid started to lift. The soft sand was holding the wheels tightly and the plane threatened to nose over in spite of Fred's weight on the tail assembly!

"Look out—she's nosing up!"

The roar of the engine died. Squint had cut down the power. He turned a white face toward his comrade. Water swirled up under the ship. Already the left wing was sloping as that wheel sank lower and lower.

"Try—again!" Squint shouted. "We've got to—get out—and help the boys!"

His voice died as the roar of the engine increased for the second time. Fred Lane murmured a little prayer. It meant so much—getting the ship up the sloping sand of the beach.

The tail assembly lifted slightly. Fred was putting his full weight on it. He started to shout another warning, for just then the crippled plane was rolling slowly away from the water, the rising tide! Steadily she pulled out of the soft sand and up the slope of the beach.

Fred shouted wildly, happily. Squint twisted around in the front cockpit as he shut off the engine.

"Made it!" he shouted back at Fred. "We stick here tonight, fix the tire and get off at dawn, if the fog's lifted. We're still fighting, Fred!"

Fred Lane grinned up at him.

"Still in the search!" he shouted back. "But there's no spare prop now."

SQUINT'S face was sober. He nodded his head slowly.

"It'll be tough, Fred." His voice was steady and calm. "But we're not licked—yet."

The fog lifted slightly at dawn, after Squint and Fred had put in a sleepless night in the DeHaviland's cockpits. They were out of the ship at the first streakings of color in the eastern sky, but there was fog above them and a strong wind from the west.

"It's breaking up." Squint commented. "But fog down here is apt to be tricky. It steams up from the Glades and we're liable to get clear of it here and then run into it in a half-hour. An hour's flight will get us to the mouth of Big Shark River and we'll need altitude for a good look around. If there's fog below us, that altitude won't do any good."

It was nine o'clock when they got into the air. Squint had to take the ship off cross-wind, but there was no help for it. He was forced to take advantage of the narrow stretch of hard, wet sand left by the receding tide. The DeHaviland climbed slowly, headed southward again.

Fred was using his day-glasses now and, as the ship climbed, he was able to see almost the whole of the cross-section of the state. He smiled grimly as he swept that portion to the southeast with the glasses. Black, green and gray—The Everglades!

"It's a mess!" he muttered through the phone connections. "Black water, mangrove, here and there a spit of white. Sand, I suppose. If we get over there and have to go down—"

"I can glide for the beach, Fred," Squint interrupted. "We'd have a small chance of landing safely anywhere in the Glades. But we're running to the west of them. Keep a sharp watch."

The DeHaviland winged on with a steady exhaust roar. Squint was using his own glasses, too. The Glades were to the east, miles and miles of mangrove swamp, black water. Blind passages were in the Glades a fine, wide stream for a twenty-eight-footer, and then, suddenly, a wall of mangrove growth blocking the way; black roots, several feet out of the water at low tide, hidden at high tide; twenty to thirty feet of heavy, green-black growth; walls that trapped and blinded.

"Fog again!" Fred said in a steady voice. "Suppose you've noticed it, Squint?"

Squint nodded and then rattled the joy-stick from side to side.

"You take her for a while, Fred," he instructed. "Swing her over the Glades a bit to the east. I want to do some looking. Never mind about the white stuff out on the Gulf. It's fog all right, but it's coming in slowly and we've got to have a good look."

They flew on in silence, except for the roar of the engine, for fifteen minutes or more. Suddenly Squint uttered an exclamation.

"Something moving—about five miles to the east, Fred! I'll take her over there and see what it is. It may be the boat!"

HE broke off, taking control of the plane from Fred. Almost instantly he had the DeHaviland in a sharp bank to the east and then was diving steeply. Fred, standing in the rear cockpit, saw the object below.

It was small and brown in appearance. Against the black of the water and the walls of mangrove growth on each side of it, it failed to stand out distinctly. Only the fact that it was in motion enabled Fred to pick it out.

"Too small for the boat," he stated in a disappointed voice. "But it's something—and it's moving!"

"Dugout!" It was Squint who spoke. "Looks as if there are two men aboard her. Get your glasses working, Fred."

"Don't need 'em!" There was excitement in Fred's voice. "Two Indians, all right, in one of those low dugouts. They're poling the canoe along that stretch of water. And they aren't in any hurry to—"

"They're under that mangrove growth!" Squint interrupted. "Either we gave them a scare or they are going through a water passage between the mangrove roots, obscured by the foliage. We'll find out right away. If they come out—"

"What difference does it make, anyway?" Fred's voice showed his disappointment. "It's not the *Betty G* and that fog is getting closer and closer."

Squint had leveled the plane off a hundred feet above the Glades. Suddenly, from the growth of mangrove

Build and Fly Models of Your Own Design

EVERY man or boy who builds aircraft models will find information he has long wanted in Paul Edward Garber's book, "Building and Flying Model Aircraft." You will find it a complete course in model building. Model construction is treated in successive stages so that at each step not only a new design but also a new method of construction is explained; when the book has been followed to its close you will know just how to construct models of your own design in the most appropriate manner.

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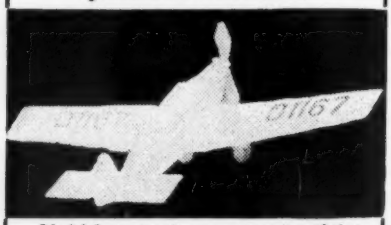

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almost directly beneath them, shot the dugout! In it were two Seminoles.

Fred was waving violently. Both Indians were using long poles, but the dugout, which was low in the water, appeared to be making little speed. Suddenly one of the Seminoles waved a hand, tilting his head back. The other continued to pole.

"They're harmless," Fred muttered. "Better get her up, Squint. There's not a sign of the boat."

"Look, Fred, look!" Squint's voice was pitched high, excited. "In the dugout—up toward the front of it! Up near what would be the bow, if there was a bow! See it?"

He heard Fred Lane's cry of surprise. And then the dugout had come to another wall of mangrove. Both Seminoles had dropped low in their craft. The dugout had vanished!

"Dave Brown's sweater!" Fred's voice was excited. "That *was* Dave's sweater, Squint! I couldn't have been mistaken—white and it had the red letter he won in football last year! I'd know that J anywhere! It was Dave's—"

"It sure was!" Squint interrupted in a slightly shaken tone. "He had that sweater with him when we left him at the boat. We weren't mistaken, Fred. Those Indians have been aboard the *Betty G!* They know where she is!"

HE was banking the DeHaviland around in a circle. The dugout was still under the arch of the foliage. The fog was closing in; thin wisps of it were flung back, disintegrated, by the whirling propeller.

"We're helpless, Squint!" Fred groaned aloud. "We can't get down to find out and the fog will have us in a few seconds!"

It closed in even as he spoke. Squint did not reply, but got the plane out of the bank and moved the stick back toward his body. The plane nosed up and climbed slowly through the white curtain.

Don't fail to read the further developments of this fine story in the November issue of MODEL AIRPLANE NEWS. *A Macfadden Publication. On the news stands October 23rd. Only fifteen cents.*

Macfadden Aviation Advisory Board

(*Continued from page* 39)

Dear Sirs:

I have made several rocket airplanes, but did not have much success with them. I used regular skyrockets. I would like you to tell me what materials are needed for making rockets and where I could obtain such material.

Yours truly,
NIELS C. BUCK,
3001 N. Mason Ave., Chicago, Ill.

Answer:

We do not advise the making of any type of rockets. These are dangerous to play with and there are many irresponsible youngsters who probably would injure themselves while experimenting with the chemicals. We are sorry but we can not supply this information.

Dear Sirs:

I am going to construct an A.M.P.A. Stinson-Detroiter and have been told by many friends that 1/16 balsa is too thin for the longerons. I would like to know whether to use 1/8 balsa or 1/16 white pine.

I wish to compliment your Advisory Board.

Airmindedly yours,
NAT MARTASIN
1418 White Plains Rd.,
West Farms, N. Y.

Answer:

Thanks for the compliment, Nat. We think you would do better to use 1/16 white pine on this construction. Balsa is too delicate to work with, especially in the sizes you mention.

Dear Sirs:

I would like to know where I can get detailed descriptions of the Wright Whirlwind motor of the 5-5-C type.

For some time I have been considering the possibility of building an accurate scaled-down, working model of this motor. I know that it would be "some job" even with an excellent lathe to work with, but my question is "Can it be done?" and I hope you gentlemen answer in the affirmative.

I wish the best of success to the "M.A.A.B."

Yours truly,
PAUL PAVICH
622 Summit St.,
Eveletch, Minn.

Answer:

Well, Paul, that is some job you have undertaken, and we admire your courage. However, we hardly can imagine what success you will have. Already there are motors on the market that are scaled down from the original Wright Whirlwind. There is the "Beetle" for instance. This is a toy compared to the giant Wright Whirlwind, and to go smaller than the "Beetle" and obtain results seems to us an extraordinary task.

However, here's wishing you heaps of success, and let us know how you make out.

———o———

We should like to urge those who write to the Macfadden Aviation Advisory Board to state their questions as clearly as possible so that we may answer them fully in every case.

The Flying Black Sheep

(*Continued from page* 38)

of flying out of the valley, getting help and returning. But each time he thought of the name that had been bestowed upon him.

"Baa-Baa-Black-Sheep!"

He remembered the hostility of the sheepmen, too. No, he would see this thing through alone. Probably he would have trouble explaining all of this if he went for help. He had not been believed when he had tried to tell about the hidden valley.

Tommy climbed into the Golconda and revved up the motor. He headed the plane for the hill slope and gave it the gun. The landing wheels took the hill easily and, to Tommy's delight, when he had ascended a little more than a hundred feet, he found that the smooth strip curved onto a flat shelf behind the bushes. He slewed the Golconda around and found that he could not see the valley meadow, so the plane itself was hidden.

HUNKY JOE's gang might think he had left the valley, unless the wheel tracks of the Golconda showed coming up the hill. Tommy had to take a chance on that. After he shut off the motor, Tommy got down to have a look around.

Cattle tracks!

Surely enough. The hoof marks ran across the flat shelf where the plane rested. Either the cattle in the valley had climbed up here while feeding or he had found the trail by which the steers had been brought in. Tommy went along the hill until he came to a space where he could see the valley meadow. No one was in sight as yet, but he knew that any minute now the gangsters might come out of the pass. He was fairly certain that they would take no chances on his escaping the second time. They probably would get him out of the way as quickly as possible.

Tommy turned back to the hill. Then he saw the slide of rock and dirt where a fresh excavation had been made. It lay at one end of the shelf on which the plane rested. When he had clambered over the slide, Tommy found himself in what appeared to be the low entrance to a cave. In his excitement he forgot all about the Hunky Joe gang.

Here was where the cattle had been brought through the hill. He was standing at the valley end of the tunnel that entered the range in Splitneck Canyon. Cattle tracks showed in the loose dirt. But the discovery that made Tommy forget everything else was the pile of broken quartz at one side of the tunnel entrance.

Gold! Tommy had seen the gold-bearing ore many times. He knew from the number of the green veins

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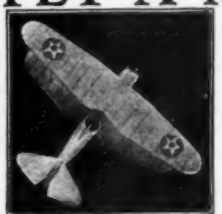

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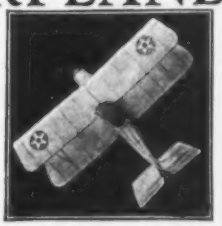

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running through the rock that he picked up, that a real high-grade mine had been struck. The gold quartz had been dug out of one side of the tunnel entrance. The vein ran back into the hill, paralleling one side of the tunnel.

TOMMY climbed over the broken rocks. He got inside the tunnel entrance. Here he struck matches and went on for several yards. He could trace the strata of quartz in the tunnel. Some fifty yards or so to the inside, the match flare revealed another cedar "shake," with one end stuck into a crevice.

Lighting another match, Tommy found that the scrawled letters were the same as those on the other board. Then this was Wickers' discovery. It would be Tad Wickers' mine. The swift realization made him happy.

Then everything flooded back into his mind. Tad was no longer his pal. Tad had burned his first plane. Bitter warfare existed on Saddle Mountain. Tad's father had been murdered. His own Dad was in jail for the crime. A gang of crooks had stolen the mine and had set the cattlemen and the sheepmen at each other's throats.

For the first time a sob came unbidden from Tommy's throat. He knew now why Tad's father had been killed, but could he get out to prove all that he had discovered? It came to him that he could keep on going, get through the tunnel into Splitneck Canyon.

But he turned and went back toward the valley entrance. He was filled with a burning rage against this gang of Hunky Joe's. Let them get away, after all they had done? Tommy's lips set in a straight line. He'd get them or they'd get him.

And he wasn't going to let them steal his plane either.

"Crack! Crack! Crack!"

A rifle bit the air three times in quick succession.

Tommy got to the tunnel entrance and looked down the slope. Two men were crawling up the strip toward the flat on which his plane rested. Others were ascending the slope under cover of the bushes. They had spotted the plane.

A rifle rang out again. Tommy heard the bullet rebound from the metal of the Golconda's cockpit. Evidently the gangsters believed him to be in the plane. Tommy crawled out until he was behind the pile of rock and gold quartz taken from the tunnel.

He laid his rifle across the stones and sighted on one of the two men who were exposed as they came up the open space. A rifle spoke again and another bullet thudded into the plane. Tommy tried to tighten his finger on the trigger and found he could not.

What had happened?

Tommy had never deliberately killed a man like that. True, he had accounted for one of the bombers during the battle in the air and he had shot the gangster who was about to hurl him from the Golconda. But that was different. He was fighting for his life, when it meant instant death not to shoot.

But now, with one of the approaching gangsters in his rifle sights, Tommy discovered that he had none of the killer strain in him. He was not frightened. Not that. It was the same feeling he had had once when he had a chance to kill a deer. He had put down his rifle that time and let the buck bound away.

Whether this feeling would have continued to hold him, Tommy never knew. One of the oncoming gangsters caught the glint of the sun from his rifle barrel. The gangster's next bullet ripped into the rocks close to Tommy's head and a fragment of the leaden bullet glazed his forehead, causing a trickle of blood which half blinded him. The cut burned and stung. Another bullet sang viciously off the pile of stones a few inches over Tommy's head.

It was Tommy's life against theirs. Tommy pulled the trigger. One of the gangsters leaped to his feet, his rifle clattered to the ground and he rolled over and over down the hill. His companion fired once more, but at Tommy's answering shot he lay still.

A fusillade of bullets began pouring into the rocks from the clump of bushes below the plane. Tommy saw a man crawl out and try to reach the plane. Tommy did not hesitate this time. He let him have it.

Tommy wondered if he dared risk a dash for the plane. But the knee that had been wounded was stiff and sore, and he had been walking with difficulty. Even now Tommy could have slipped back into the tunnel. He believed he could have held the gangsters back if he had done that.

BUT there was the Golconda. It was the one thing in the world that Tommy owned and loved. Of course, there were other planes. But there would never be another Golconda like this one. To Tommy it seemed to have taken the place of his lost pal, Tad. His plane to him was a living, breathing thing that knew him and obeyed his hand. No, he would not leave the Golconda in the hands of the gang.

Hunky Joe's men suddenly ceased firing. Tommy had got three of them. What trick were they trying now? The bushes below the plane moved. The gangsters were slipping back toward the valley. The silence was worse than the cracking of rifles in the attack. Tommy waited. The bushes ceased to move.

Tommy raised his head cautiously. For a minute he could not see or hear anything. Then he counted five men crossing the narrow strip in view between him and the cabin. They were angling up toward the hill to his right. Tommy saw that if they climbed the hill they would be above him. They could drive him from behind the rocks back into the

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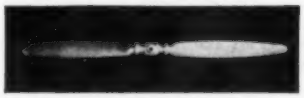

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tunnel. Then, if they held them there, some of them could reach the plane.

Tommy calculated the distance. It would take them a minute or more to get through the brush behind the cabin and up to the point that overlooked his position. The plane was less than twenty yards away. Could he reach it and get the motor going in time to take-off before they saw him?

He had counted five men going up the hill. Perhaps there were still others. Probably one or two had remained in the brush below the plane. They would get him if he tried to cross. He could not run fast with his wounded knee.

Tommy took the chance. Discarding the rifle and taking the gangster pilot's pistol in his hand, he crawled from behind the rocks. He went as fast as his knee would permit. It was hurting now. He got halfway to the plane.

THEN he saw the other man. He was crawling, too. He had emerged from the bushes and was making his way toward the plane. Then the whole thing had been a ruse. The gangsters had wanted Tommy to think they were leaving or planning to attack from a new direction.

The man approaching the plane from the other side held a pistol in his hand. He had not seen Tommy. His eyes were fixed on the plane and he was moving at a good pace on his hands and knees.

Tommy did not wait to sight the pistol. He slipped the safety catch and let fly a stream of lead from the muzzle. One of the bullets hit the gangster's right arm. The jolt of the flying lead caused him to throw up his hand and his pistol went flying away. With the arm dangling loosely, the gangster jumped to his feet and dashed for the plane.

Tommy's move had placed the fuselage of the plane between him and the gangsters ascending the hill. Apparently they had not seen him, but they could see their own man on his feet and running toward the Golconda. For a moment they must have thought their ruse had been successful.

Tommy was between the wings now. He waited until the gangster got to the nose of the plane. The gangster saw the muzzle of the automatic pointed at his stomach. Slowly he raised his uninjured arm. The other gangsters had seen the movement. But Tommy was concealed from them by the body of the plane. Now he climbed up over the wing, keeping his pistol on the gangster.

When he could get a good look at his face, Tommy saw that the man was the gangster's pilot. A shout rang out from the hill. Tommy had been seen climbing into the cockpit. Out of the tail of his eye, Tommy could see the men start running.

"Spin the prop," Tommy yelled at the gangster, his left hand adjusting

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the switch and the throttle, while his right held the pistol.

Without a word the gangster reached up with his unwounded hand and swung the prop. A rifle bullet tore into one of the wings. But evidently the others feared they would hit their own man and they did not fire again, although they were crashing through the brush a hundred yards away.

Tommy did not wait. He started revving up the motor. The gangster pilot caught the wing and swung himself up. Tommy drew back his pistol hand. He did not want to shoot the wounded man. He made a motion with the pistol barrel.

"For God's sake!" gasped the gangster pilot. "Take me with you—I wanta get out—I'm bleedin' to death——"

Tommy saw the blood dripping from his wounded hand.

He could not leave the man there to die.

"Get in, let's go," he said.

THE wounded gangster crawled over the side and collapsed in the cockpit behind Tommy.

Still the other gangsters held their fire. They could not understand what was happening. They paused for an instant and then they came on yelling. In that instant Tommy gave the Golconda the gun, rolled along the slope directly toward Hunky Joe's men and braked his left landing wheel to turn down the pitch of the hill on the natural runway of the smooth grass.

The gangsters understood now what was happening. Half a dozen guns began talking. Luckily the first fusillade went high, missing the prop and tearing holes in the upper wings. Tommy did not want to do it, but Hunky Joe's men had forced it upon him. As the plane whirled, the clump of bushes from which they were shooting came directly into the sights of his machine gun.

Tommy caught at the trigger-ring. The "Tommy" on the cockpit rim let out its rippling bark. In the one glance he had, Tommy saw the top of the brush that concealed the gangsters sway gently as thought a sudden wind had swept across.

The Golconda's motor thundered at the urge of the throttle. The nose lifted. No more bullets came from Hunky Joe's men.

Tommy headed the plane over the range of Splitneck Canyon toward home.

Under the Golconda loomed the Splitneck-Canyon meadows. In them there was no movement of sheep or cattle peacefully feeding. Directly below lay the last of the meadows, the one that ended against the jagged range blocking off the hidden valley. The spreading strip of green in which Tommy had been staked out to die under the death-dealing bombs of the black plane.

For a moment Tommy forgot the badly wounded gangster pilot in the cockpit behind him. He pushed the stick forward and permitted the Golconda to volplane to a lower level. He wanted to find out if he could detect the tunnel entrance from the air.

At 200 feet Tommy could see the scar in the face of the hill. Through that tunnel lay fortune for Tad Wickers. At its farther end lay circumstantial proof that might free Tommy's Dad from the charge of murder. Tommy decided he must get home and bring men quickly.

Perhaps they would find some of Hunky Joe's men still alive. But when Tommy recalled the swaying tops of the brush in which the gangsters had been concealed, swaying as though in a wind with the hail of his machine-gun bullets, he doubted whether any had escaped.

With a jolt his mind came back to the wounded gangster in his plane. He must save his life. Not only because it was the humane thing to do, but because the gangster pilot would talk now perhaps. Much of the mystery was still unexplained. There was no positive proof that his Dad had not killed Wickers.

Tommy banked the plane sharply. It was wrong to be delaying here when the wounded man might be bleeding to death, might be dead. Then suddenly below him the last canyon meadow became populated.

HALF a hundred figures came streaming down from the spot where the trail ended. They strung out into the meadow. The Golconda was low enough for Tommy to see that the men were looking up, watching the plane. White hands flashed back and forth. They were waving at him.

Tommy idled his motor. Behind him the gangster pilot coughed. His voice was faint, but he made Tommy understand.

"Haven't got long—goin' West—oughta known better—no use to squawk now. You're white, kid—white all the way through. I know a lot—oughta tell—Hunky Joe killed that fellow Wickers to steal his mine—started the sheep an' cattle war. His men did all the shootin'—poisoned the spring—turned in the dogs. They—kid, can you get me down—wanta sign somethin'—tell the truth—flew at Blanc Mont—God—I'm sorry——"

So intent was Tommy on listening to the dying pilot's words that he forgot the position of the Golconda until he heard a wild shout from below. The meadow was rushing up to meet him. Ahead and to one side of the plane were white faces and waving arms. Some men were running out of the Golconda's pathway.

Tommy pulled the stick back just in time to level off. The points touched, bumped, touched and the Golconda dragged to a stop. Unheeding the shouting men around the plane, Tommy tore off his leather coat, then his shirt, ripping it into strips. The gangster pilot's face was the color of death itself, but his eyes

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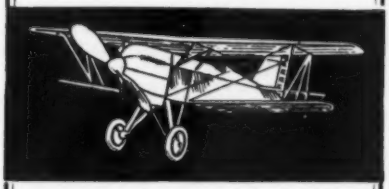

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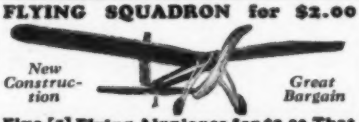

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were alive and his lips still moved.

Tommy got the sleeve of the pilot's coat free. Blood still oozed from a bullet wound above the elbow. A twist or two of the stripped shirt and Tommy had it stopped. The pilot smiled faintly.

"No use, kid," he murmured. "All gone—inside—gotta paper an' pencil—lemme try—you write, maybe I can sign—wanta make good. Goin' West—you've been white, kid, real white——"

Tommy heard men climbing onto the wings of the plane. He saw faces coming up over the edge of the cockpit. It was hard to understand.

Old man Nesbit—Sheriff Higgins, what was he doing there? McLaughlin, the sheepman. Funny that he would be with Nesbit. And—Tommy was getting his supply order pad and the pencil from under the seat—yes, it was Tad Wickers—old Tad, and Tad was crying!

Tommy bent over the dying pilot. The shouts of the men outside the plane had died down. The crowd had obeyed the suddenly lifted hand of the sheriff. Tommy slowly repeated the words that had been spoken by the pilot.

"Hunky Joe shot Wickers——"

The pilot's lips murmured, "Yes—go on——"

"Poisoned spring—turned dogs loose—stole gold mine——"

"Yes—right." The white lips could only form the words.

"Started war to drive out sheepmen and cattlemen—shot men from ambush——"

The pilot's lips did not move. Feebly he raised his right hand. His fingers gripped the pencil. With a last flurry of strength, the bit of reserve life he had been holding, saving for this, the pilot scrawled his name at the bottom of the sheet.

"Jerry Jenkins——" After it, the pencil trailed the words, "Goin' West."

His fingers relaxed, the pencil dropped. Tommy, with a sob in his throat, looked up at the ring of faces above him. Without a word he handed the pad to Sheriff Higgins.

Now the crowd was surging forward. They were all around the plane. Hands were reaching up and lifting Tommy to the ground. They were kindly hands. Some one cheered and the sound caught and rang across Splitneck Canyon.

Explanations came. Tommy's brother Jack was clutching his arm, holding on. And Tad, his old pal, had him by the hand, gripping his fingers. Sheriff Higgins was smiling. Old Nesbitt, the cattleman, and McLaughlin, the sheepman, bitter enemies, were pounding each other on the back. Every one was acting crazy.

Bit by bit, the story was told. The sheepmen had seen the fight in the moonlight over the canyon. They thought Tommy had been killed. Then McLaughlin, up in the canyon, had heard the shots on the other

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side of the range. He had heard the machine gun. It was he who had found the entrance to the tunnel. A searching party had been formed. They were going through.

Sheriff Higgins had been brought to Saddle Mountain by George Struthers. And——

IT was Tommy's brother Jack and old man Nesbit who told him.

It was Tad who had sent him the money to pay down on the Golconda. He had sent it because he was sorry that Tommy had seen him that day and thought he had burned his plane, the mail plane. Tad had seen one of the gangsters set the fire. Then Tad had sold off nearly all of his sheep and given the money to old man Nesbit to give to Tommy "From a Friend."

And it was Tad who had saved him from the bombers that night, who had cut him loose and then fled to keep Tommy from knowing, because he had wanted Tommy to be his friend again without feeling that he owed him his life.

The sheriff read the scribbled words of the dead pilot's confession.

"A gold mine?" asked the excited Jack.

Tommy walked to the plane and reached into the cockpit. He brought out Art Wickers' location notice.

"Here's a present for you, Tad," he said. "There's gold there, lots of it. It's yours now, I guess."

Tad took the scrawled cedar "shake." For a minute he couldn't speak.

"And," boomed the voice of Sheriff Higgins, "I'll have a bigger present for you, Tommy, as soon as I can get word to Astoria. I'm giving you back the one man who has always had faith in you—your Dad——"

Tad had his arm around Tommy's shoulder.

"We swore by the lightnin'-struck cedar Tommy—what is mine is half yours—that goes for the gold mine—and, Tommy—take me with you—I've never been in a plane. Let's take the sheriff and go bring your Dad home."

Why I Am Interested in Aviation

(*Continued from page* 33)

up with events in the aviation world.

Some of the most wealthy men in the United States have shown their confidence in aviation by investing in air transport and manufacturing companies, and yet aviation is still in its infancy.

Ford pays his pilots $150 per week. Air-mail pilots are making from $400 to $850 per month. Aeronautical engineers are making from $100 to $500 per week. Airplane workers on the ground, such as wing workers, riggers, motor experts, inspectors, superintendents, salesmen, etc., are making from $100 to $150 per week, and more, and are working regularly, living well and buying their own homes and fine cars.

Flying is the most perfect form of travel known to man. There is no other means of traveling that can compare with the speed, comfort, safety and all-around pleasure of air travel.

We have our plans now—just as our forefathers and pioneer aviators had years ago when they dreamed of the day when aviation would be an industry—when express, mail and passengers will be carried on regular air lines; when giant factories will turn out ships by the thousands; when hundreds of fields will be filled with commerce, with roaring giants in the form of air liners, fast express planes and thousands of privately owned ships.

That day is here!

The world is on wings! Have you ever flown through the night with the thunder of a giant motor as music for your ears—with long tongues of flame belching from exhaust stacks on either side of your ship's nose—with the world below a million twinkling lights and stretching out miles away, the great airway beacons piercing the blackness of the night?

If not, you don't know what living is!

Have you ever sat in the cockpit of a ship that would fly 150, 200, or 250 miles an hour—called "contact"—and had your mechanic swing your propeller which caused a thunderous roar from your waiting motor—had your ship thunder across the field and suddenly zoom aloft into the heavens with a rush that jerked you back against the seat and sent an exhilaration coursing through you, unequalled by any other experience you have ever felt?

If not, you don't know what living is! Then you have not tasted of the greatest thrill life can give you.

To sum up my reasons for being interested in aviation, they are for three reasons: big pay, popularity, and the thrill of flying.

These reasons and the development of aviation as it is today should make every forward-looking person interested in aviation.

Yours hopefully,

DONALD LEIGH, age 16 years.

Read "The Barge of Yellow Death" in the November issue of MODEL AIRPLANE NEWS—on the news stands October 23rd.

The Death Jinx Hovered Over Squadron 15

When Teddy McCrae, drunk and frightened, proposed a toast to "The Death Jinx—and the men who die at dawn!"—angry curses filled the smoke-laden barroom.

Croble, Crawford and Jennings had been sent hurtling to their death in bullet ridden, flaming planes that morning. Yesterday it had been three others, and still another three the day before. Only four planes were left. The whole squadron was oppressed by the shadow of the mysterious jinx that hovered over them. The men, who with young Teddy McCrae had "won" the right to fly on the next dawn patrol, shivered apprehensively at his ill spoken words.

Lieutenant MacCready, far gone in his cups, muttered angry threats to Hamel, a brother flyer. Nerves, taut from the strain of previous days, were at the snapping point. Conklin strove to drag MacCready from the *estaminet* to avoid an inevitable fight. But MacCready was in fighting mood. If Hamel was a coward he'd take it out on the cook, three hundred pound Baby Bibler, who lorded it over the cleanest and best mess in that hell ridden sector.

Stumbling blindly in his drunken rage he staggered to the kitchen. Conklin followed to protect him. "Devil take your stinking wheat cakes! I won't have those things for breakfast. I won't die with them under my belt!" he thundered at the cook. Conklin stood by mute, watching . . . waiting.

The K. P. whispered mysterious warnings about the death jinx to Conklin. *But that night the K. P. was found dying.* What was the secret of the calamity that had visited Squadron 15. Before he died the K. P. muttered hoarsely about wheat . . . wheat cakes! Were wheat cakes involved in this inexplicable mystery? Or was Hamel, found sneaking about the scene of the murder at the root of the scourge?

Hamel was new to the squadron, but he alone had come back unscathed from yesterday's fight. Pale with expectancy, Young McCrae, MacCready and Conklin waited for the break of day when they were to face the death Jinx on Dawn Patrol!

Partial Index to Great October Issue

Gold Digger's Paradise

Gypsy Air Trails

Hunting Thrills In the Air

The Death Jinx

The Scourge of the South Sea Skies

No Man's Air

When Sky Plots Go Astray

Grim Missiles from the Sky

FLYING STORIES' Ground Course

Caterpillar Club

Dirt Behind the Ears

Plane Talk

The *Death Jinx* is replete with breath-taking descriptions of dog fights high in the air, with staring, startled men in the trenches below for spectators. Don't fail to read this tremendous story of thrills and swift action in the October issue of FLYING STORIES.

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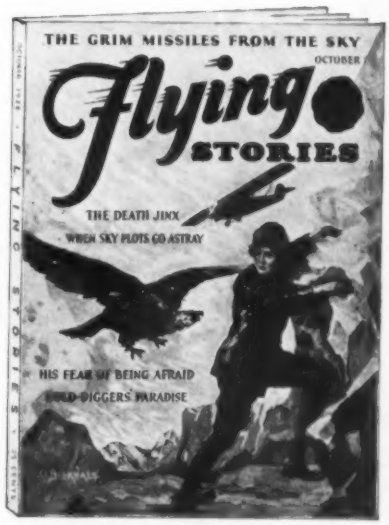

Read *The Scourge of the South Sea Skies.* It will fascinate you with its vivid color, arouse you with its amazing plot and gripping climax. And there are many other great yarns such as *Grim Missiles from the Sky* to hold your interest.

In addition to the fine fiction prominent airmen write their own intimate personal air experiences for FLYING STORIES. Great record breakers tell of their epoch making flights. If you plan to make aviation your future, you can't afford to miss FLYING STORIES' great ground course. It will give you a practical knowledge of *aerodynamics* and provide you with an indispensable background. Be sure to buy your copy of October FLYING STORIES' at the nearest news stand or mail the coupon below. Do It For Your Own Sake!

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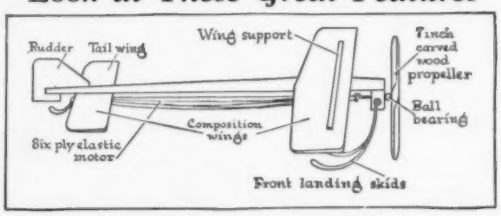

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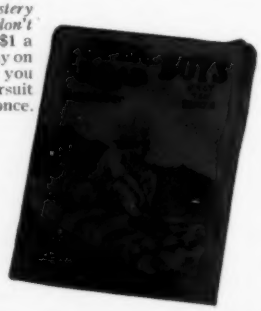

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